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PAPER TRADE JOURNAL

The International Weekly of the Paper and Pulp Industry and the Pioneer Publication in its field

FIFTY-FIRST YEAR

Published Every Thursday by the

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Vol. LXXVI. No. 18 — NEW YORK AND CHICAGO — Thursday, February 22, 1923

Table of Contents

NEWS OF THE TRADE: PAGE

Productions of Paper and Pulp for 1922 16
Building Machine for Hammond Bag & Paper Co. 24
Good Demand for Paper in Boston 24
Beckwith Mfg. Co. To Start Plant at Danvers 24
Spurt In Demand Occurs in Philadelphia 26
Phil-Fibre Building Plans Postponed 26
Dee Paper Co. Expands 26
New Offices for Kalamazoo Co. 26
De Jonge to Serve Box Trade 26
Fort Wayne Company's New Office 26
News Notes of Interest in Philadelphia 26
Nekoosa-Edwards Co. Starts Work on Two-Machine Mill 28
Water Power at Stevens Point 28
Kimberly-Clark Co. to Build Club House 28
G. M. Hafenbrack Leaves Nekoosa-Edwards Co. 28
Westminster Mills Ship First Paper 28
H. J. Fleming Paper Co. Installs Machinery 28
Penn Paper Co. Capital Stock Sold 28
Canadian Pulp and Paper Benefit by French Treaty 30
Price of Timber Limits in Quebec 30
Wayagamack Annual 30
Frank Barnjum Offers More Prizes 30
Tree Planting on the Prairie 30
Sir Frederick Becker's Visit 30
Control of the Grand Falls 30
Michigan Trade News of Interest to Paper Men 32
Gives Insurance to Benefit Association 32
New England Paper Box Men Meet in Boston 32
Low Flow in Black River Handicaps Mills 32
Toronto Paper Merchants Report Quieter Demand 34
Paper Box Business Dull in Toronto 34
Mr. Buntin Left Large Estate 34
Retirement of Alfred Jephcott 34
New Port Arthur Mills Nearly Ready 34
Provincial Paper Profits Maintained 34
Waxed Paper Plant Will Be Sold 34
May Now Reforest Land 34
Notes and Jottings of the Toronto Trade 34
Graphic Arts Dinner is Success in Philadelphia 36
To Tax Logs from British Columbia 38
Miami Valley Traffic Club Meets 38
New York Trade Jottings 40
Bids and Awards for Government Paper 42
Salesmen's Luncheons in Ohio and New York 42
Export Demand Good for German Paper 42
Buck, Kiaer & Co. Open Wood Pulp Sales Office 45
For Print Paper Industry in Alaska 56
Paper Specifications Committee Reappointed 62
Wisconsin Paper Men Hold Meetings 64
Imports and Exports of Paper and Paper Stock 72

EDITORIAL:

Effects of Swedish Pulp Strike 44
Export Trade in Paper 44

TECHNICAL SECTION:

Factors Influencing the Properties of Wood Cellulose as Isolated by the Chlorination Method 47
T. A. P. P. I. Convention April 9-13 49
New Members of Technical Association 49
Electricity in Pulp and Paper Mills 50
Paper Pulp Recovery 54
Use of Pulp and Paper Textbooks 56

COST SECTION:

Costing As a Function of Management 57
Kalamazoo Meeting 64
Berkshire Meeting 64

OBITUARY:

William J. Demarest 38

MARKET REVIEW:

N. Y. Market Review 70
Market Quotations 71
Miscellaneous Markets 74

Want and For Sale Advertisements, Pages 76, 77 and 78

PRODUCTION OF PAPER AND PULP FOR 1922

Comparison of Years 1921 and 1922 in Federal Trade Commission's Report Shows Marked Gains in Production and Shipments of All Grades of Paper and Pulp—Statistical Comparison for Various Grades Month by Month Furnished As Well As for Five Year Period Ending December 31, 1922—Consumption of News Print in U. S. Last Year Exceeded Production by 600,000 Tons

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 22, 1923.—The Federal Trade Commission has just issued a statistical report on the paper and pulp industry which shows in detail the production and shipments of various grades of paper and pulp for the calendar years 1921 and 1922. Comparative figures are also shown for the five-year period 1918-1922.

The report developes the fact that the consumption of news print paper in the United States for 1922 exceeded production by about 600,000 tons, the deficiency being made up by imports, principally from Canada.

Open market prices paid for news print paper by publishers in 1922 compared with 1921, according to the report, decreased 100 pounds f. o. b. from 37 per cent in January, 1921, to about 7 per cent for October of the same year with the exception that the price for December increased about 6 per cent. Contract prices for the same period decreased from about 38 per cent to about 10 per cent during 1921.

The report also gives extensive information concerning import and export figures for various grades of paper and wood pulp as shown by the records of the Department of Commerce for the years 1918 to 1922, with the exception of the last three months of 1922. Other statistics dealt with in the report are percentages of increases of production for the different grades of paper, manufacturers productions, etc.

Eibel Process Patents Upheld

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 21, 1923.—The United States Supreme Court on Monday handed down a decision upholding the validity of the Eibel Process in the case of the Eibel Process Company against the Minnesota & Ontario Paper Company and others. This puts an end to the numerous cases in connection with the Eibel patents which have been undertaken during the past few years.

Official copies of the Court's decision, in accordance with the usual procedure, are not available at this writing.

Readers of the PAPER TRADE JOURNAL will probably remember that the case was argued before the Supreme Court early this year and fully reported in this paper. There has been a great deal of interest in the matter inasmuch as these patents affect so large a part of the industry.

Total News Print—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Total News Print—										
January	65	85	23,934	24,763	105,808	123,830	103,192	116,176	26,550	32,417
February	65	88	26,550	32,417	97,786	103,040	96,521	96,281	27,815	39,176
March	78	85	27,815	39,176	117,507	107,532	117,142	104,919	28,180	41,789
April	79	88	28,180	41,789	111,861	115,408	115,167	122,091	24,874	35,106
May	82	87	24,874	35,106	129,950	78,868	130,043	82,776	24,781	31,198
June	82	92	24,781	31,198	127,230	87,724	128,644	92,293	23,367	26,629
July	82	92	23,367	26,629	120,839	94,247	123,050	95,357	21,156	25,519
August	83	92	21,156	25,519	133,236	102,277	134,490	100,668	19,902	27,128
September	83	86	19,902	27,128	125,402	98,898	126,494	95,785	18,810	30,241
October	85	86	18,810	30,241	130,682	101,884	129,749	109,110	19,745	23,015
November	75	86	19,745	23,015	127,983	104,604	128,077	104,492	19,651	23,127
December	73	86	19,651	23,127	119,404	107,877	119,847	107,070	19,208	23,934

Year	On Hand, January 1st	Total Production	Total Shipments	On Hand December 31st
1922	23,934	1,447,688	1,452,414	19,208
1921	24,763	1,226,189	1,227,018	23,934
1920	15,369	1,511,968	1,502,574	24,763
1919	19,408	1,374,517	1,378,556	15,369
1918	31,713	1,260,285	1,272,590	19,408

Standard News—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922, Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Standard News—										
January	53	67	19,607	19,573	98,702	113,764	96,525	106,228	21,784	27,109
February	50	67	21,784	27,109	91,050	94,823	89,936	88,639	22,898	33,293
March	65	67	22,898	33,293	110,061	98,190	109,661	95,966	23,298	35,517
April	65	67	23,298	35,517	105,079	105,855	108,276	111,792	20,101	29,580
May	69	69	20,101	29,580	120,654	73,181	121,043	75,806	19,712	26,955
June	69	72	19,712	26,955	117,473	81,415	119,107	86,266	18,078	22,104
July	69	74	18,078	22,104	111,682	86,139	113,394	87,279	16,366	20,964
August	68	74	16,366	20,964	123,481	95,105	123,830	93,341	16,017	22,728
September	68	67	16,017	22,728	115,899	90,627	117,229	88,114	14,687	25,241
October	63	67	14,687	25,241	119,984	93,489	119,203	100,503	15,468	18,227
November	62	67	15,468	18,227	117,439	97,521	117,537	96,853	15,370	18,895
December	60	67	15,370	18,895	110,803	100,834	111,045	100,122	15,128	19,607

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	19,607	1,342,307	1,346,786	15,128
1921	19,573	1,130,943	1,130,909	19,607
1920	12,338	1,380,239	1,373,004	19,573
1919	15,656	1,227,180	1,230,498	12,338
1918	26,482	1,125,086	1,135,912	15,656

Book Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Book Paper—										
January	81	93	38,757	25,005	73,466	64,382	73,760	60,507	38,463	28,880
February	84	94	38,463	28,880	69,408	56,687	68,537	51,980	39,334	33,587
March	88	95	39,334	33,587	77,889	59,832	78,856	55,698	38,367	37,721
April	91	92	38,367	37,721	70,507	51,380	71,507	50,846	37,367	38,255
May	92	93	37,367	38,255	82,574	52,642	80,450	51,258	39,491	39,639
June	92	92	39,491	39,639	83,517	53,934	81,552	53,320	41,456	40,253
July	92	90	41,456	40,253	74,435	48,527	77,371	51,211	38,520	37,569
August	91	89	38,520	37,569	87,922	59,711	88,969	62,120	37,473	35,160
September	92	89	37,473	35,160	87,782	62,416	88,538	61,990	36,717	35,586
October	96	89	36,717	35,586	92,865	72,139	91,124	75,382	38,458	32,343
November	92	87	38,458	32,343	93,065	73,544	94,753	68,827	36,770	37,060
December	92	84	36,770	37,060	88,489	70,798	89,028	69,101	36,231	38,757

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	38,757	981,919	984,445	36,231
1921	25,005	725,992	712,240	38,757
1920	23,279	1,104,464	1,102,738	25,005
1919	28,431	914,823	919,975	23,279
1918	36,845	849,157	857,571	28,431

Total Paperboard—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Total Paperboard—										
January	202	244	63,018	53,104	145,198	105,806	145,485	100,431	62,731	58,479
February	205	242	62,731	58,479	153,704	123,832	152,527	121,588	63,908	60,723
March	229	241	63,908	60,723	192,308	139,723	184,230	133,052	71,986	67,394
April	229	236	71,986	67,394	164,327	128,186	166,557	124,800	69,756	70,780
May	227	238	69,756	70,780	176,790	122,801	180,844	125,602	65,702	67,979
June	224	238	65,702	67,979	183,759	130,177	181,982	130,059	67,479	68,097
July	224	240	67,479	68,097	165,551	112,265	168,997	115,642	64,033	64,720
August	227	233	64,033	64,720	195,115	138,530	199,521	139,974	59,627	63,276
September	227	226	59,627	63,276	198,248	160,207	199,976	164,521	57,899	58,962
October	227	226	57,899	58,962	196,769	181,775	201,700	183,568	52,968	57,169
November	221	223	52,968	57,169	196,669	172,582	193,773	169,971	55,864	59,780
December	219	220	55,864	59,780	185,397	149,047	186,568	145,809	54,693	63,018

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	63,018	2,153,835	2,162,160	54,693
1921	53,104	1,664,931	1,655,017	63,018
1920	40,329	2,313,449	2,300,674	53,104
1919	46,196	1,950,037	1,955,904	40,329
1918	42,411	1,926,986	1,923,201	46,196

Bag Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Bag—										
January	38	38	3,085	3,031	16,797	6,296	16,092	5,861	3,790	3,466
February	39	37	3,790	3,466	14,560	7,603	14,885	7,771	3,465	3,298
March	48	38	3,465	3,298	18,586	8,685	18,337	8,191	3,714	3,792
April	46	39	3,714	3,792	17,194	7,954	17,507	8,314	3,401	3,432
May	46	37	3,401	3,432	17,345	7,323	17,442	7,363	3,304	3,392
June	46	39	3,304	3,392	16,370	6,255	15,664	6,488	4,010	3,159
July	46	45	4,010	3,159	17,275	6,661	17,470	6,626	3,815	3,194
August	49	41	3,815	3,194	18,994	10,499	19,004	10,808	3,805	2,885
September	48	43	3,805	2,885	19,424	13,763	19,764	13,634	3,465	3,014
October	48	43	3,465	3,014	19,298	19,463	19,212	18,740	3,551	3,737
November	42	38	3,551	3,737	19,805	19,161	19,826	19,148	3,530	3,750
December	39	35	3,530	3,750	16,474	17,200	16,209	17,865	3,795	3,085

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	3,085	212,122	211,412	3,795
1921	3,031	130,863	130,809	3,085
1920	2,087	311,923	210,979	3,031
1919	3,408	175,424	176,745	2,087
1918	6,498	177,362	180,452	3,408

Wrapping Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Wrapping—										
January	126	142	48,848	35,800	65,791	44,620	60,133	35,179	54,605	45,241
February	126	145	54,605	45,241	62,035	46,352	57,290	40,317	59,251	51,276
March	152	145	59,251	51,276	70,141	49,879	64,461	43,619	64,931	57,536
April	150	144	64,931	57,536	61,562	51,713	58,092	50,627	68,401	58,622
May	149	145	68,401	58,622	71,494	53,084	68,989	52,203	70,906	59,503
June	146	151	70,906	59,503	68,371	50,332	68,018	48,696	71,259	61,139
July	147	153	71,259	61,139	65,481	45,090	67,372	44,519	69,368	61,710
August	149	146	69,368	61,710	74,315	56,167	81,239	55,066	62,444	62,811
September	150	139	62,444	62,811	70,329	59,095	77,930	65,593	54,843	56,313
October	151	139	54,843	56,313	74,630	64,518	80,812	68,453	48,661	52,378
November	147	130	48,661	52,378	77,300	65,905	80,422	68,078	45,539	50,205
December	145	130	45,539	50,205	74,822	64,850	55,736	66,207	64,625	48,848

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	48,848	836,271	820,494	64,625
1921	35,800	651,605	638,557	48,848
1920	26,791	831,889	822,880	35,800
1919	40,499	694,207	707,915	26,791
1918	53,551	714,000	727,052	40,499

Fine Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31; and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Fine—										
January	100	105	34,000	30,312	27,405	22,756	26,074	18,320	35,331	34,748
February	101	106	35,331	34,748	26,663	19,242	26,190	16,593	35,804	37,397
March	104	108	35,804	37,397	29,346	19,058	30,027	17,100	35,123	39,355
April	103	107	35,123	39,355	27,420	15,631	26,737	14,903	35,806	40,083
May	103	107	35,806	40,083	30,129	17,485	28,950	16,425	36,985	41,143
June	103	107	36,985	41,143	31,291	17,511	29,602	17,846	38,674	40,808
July	103	107	38,674	40,808	27,767	16,327	28,820	17,750	37,621	39,385
August	105	107	37,621	39,385	33,081	18,833	32,813	20,315	37,889	37,903
September	105	106	37,889	37,903	31,576	20,555	33,252	22,464	36,213	35,994
October	105	106	36,213	35,994	33,774	24,635	33,497	26,672	36,490	33,957
November	98	102	36,490	33,957	31,666	24,609	31,276	25,177	36,880	33,389
December	103	103	36,880	33,389	30,932	25,843	31,070	25,232	36,742	34,000

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	34,000	361,050	358,308	36,742
1921	30,312	242,485	238,797	34,000
1920	31,516	389,322	390,526	30,312
1919	34,576	343,762	346,822	31,516
1918	32,500	368,012	365,936	34,576

Tissue Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Tissue—										
January	82	99	6,185	8,774	14,954	7,704	14,103	7,356	7,036	9,122
February	92	99	7,036	9,122	15,273	9,372	14,286	9,640	8,023	8,854
March	99	97	8,023	8,854	17,965	10,760	17,354	10,889	8,634	8,725
April	97	93	8,634	8,725	15,486	9,686	15,591	10,665	8,529	7,746
May	95	94	8,529	7,746	14,688	11,135	14,100	11,560	9,117	7,321
June	95	95	9,117	7,321	15,534	13,304	13,884	12,569	10,767	8,056
July	95	93	10,767	8,056	14,669	12,238	15,643	12,209	9,793	8,085
August	98	94	9,793	8,085	17,971	13,734	19,313	14,368	8,451	7,451
September	98	90	8,451	7,451	17,485	14,241	18,197	14,465	7,739	7,227
October	98	90	7,739	7,227	17,616	14,964	17,907	15,621	7,448	6,570
November	91	86	7,448	6,570	17,284	15,169	17,393	15,928	7,339	5,811
December	88	82	7,339	5,811	18,599	15,835	17,226	15,461	8,712	6,185

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	6,185	197,524	194,997	8,712
1921	8,774	148,143	150,731	6,185
1920	5,697	177,447	174,370	8,774
1919	5,400	155,400	155,103	5,697
1918	6,083	143,298	143,981	5,400

Hanging Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Hanging—										
January	21	26	7,782	3,027	7,486	9,507	8,179	7,735	7,089	4,799
February	19	25	7,089	4,799	7,211	7,522	8,689	4,918	5,611	7,403
March	26	25	5,611	7,403	8,919	5,715	9,209	3,804	5,321	9,314
April	25	20	5,321	9,314	6,809	3,862	6,807	3,089	5,323	10,087
May	26	22	5,323	10,087	6,414	2,479	5,646	2,044	6,091	10,522
June	26	23	6,091	10,522	5,011	3,109	3,948	4,093	7,154	9,538
July	26	22	7,154	9,538	5,000	4,459	5,319	4,996	6,835	9,001
August	28	22	6,835	9,001	6,302	5,476	7,032	4,809	6,105	9,668
September	28	23	6,105	9,668	7,375	5,482	8,108	4,933	5,372	10,217
October	28	23	5,372	10,217	9,802	7,158	11,713	7,946	3,461	9,429
November	28	21	3,461	9,429	11,453	7,505	11,890	8,078	3,024	8,856
December	24	19	3,024	8,856	10,112	7,451	10,301	8,525	2,835	7,782

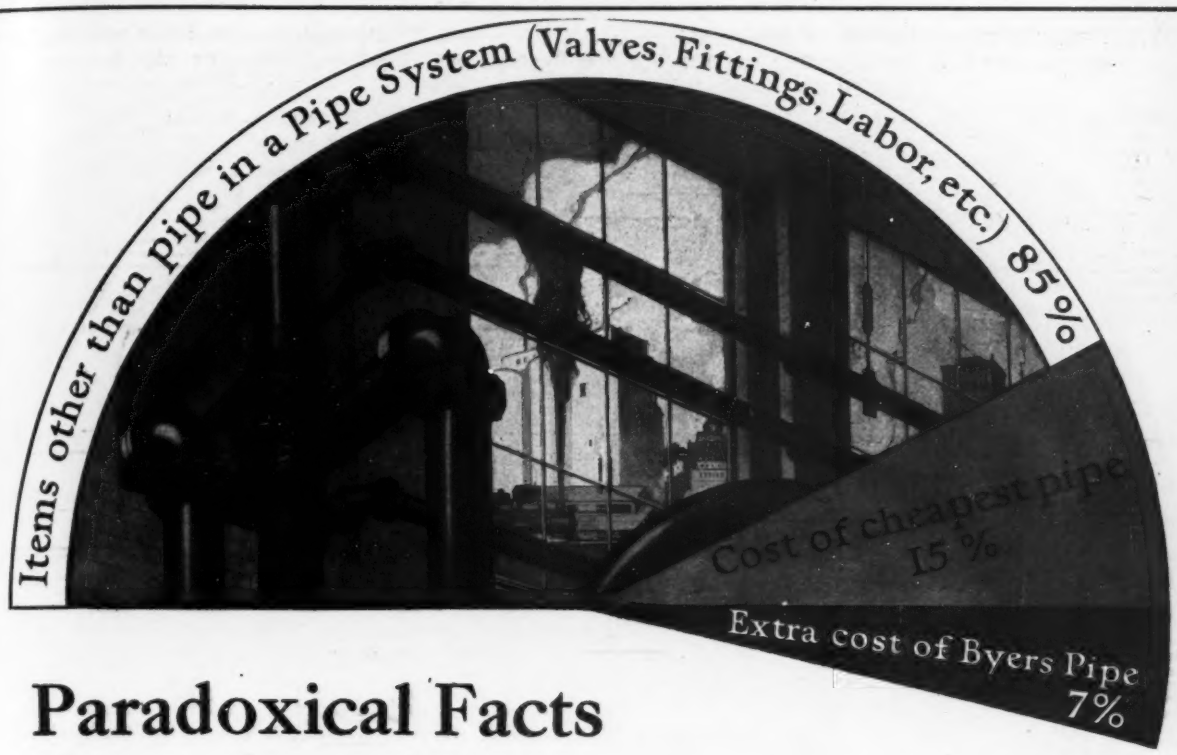
Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	7,782	91,894	96,841	2,835
1921	3,027	69,725	64,970	7,782
1920	1,452	113,824	112,249	3,027
1919	2,933	92,136	93,617	1,452
1918	6,789	63,268	67,124	2,933

Boxboard—Domestic Production, Shipments, and Stocks (Net Tons), by Months (a) 1921 and 1922; Stocks on Hand January 1 and December 31, and Total Quantity Produced and Shipped, by Years, 1920 to 1922, Inclusive

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Boxboard (a)—										
January	122	144	31,964	25,451	105,416	74,870	107,897	71,625	29,483	28,696
February	122	139	29,483	28,696	107,842	89,788	108,129	89,123	29,196	29,361
March	140	139	29,196	29,361	140,167	98,771	135,800	95,827	33,563	32,305
April	136	135	33,563	32,305	121,398	90,637	122,238	87,709	32,723	35,233
May	134	137	32,723	35,233	130,078	85,546	131,529	88,141	31,272	32,638
June	129	137	31,272	32,638	134,617	95,964	133,841	95,413	32,048	33,189
July	129	136	32,048	33,189	117,391	83,450	119,846	85,736	29,593	30,903
August	127	138	29,593	30,903	146,248	108,661	148,479	107,404	27,362	32,160
September	129	136	27,362	32,160	143,998	120,898	144,286	121,271	27,074	31,787
October	129	136	27,074	31,787	137,593	133,755	141,044	135,737	23,623	29,805
November	131	126	23,623	29,805	146,984	127,249	144,387	125,089	26,220	31,965
December	128	123	26,220	31,965	139,304	122,747	140,073	112,748	25,451	31,964

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	31,964	1,571,036	1,577,549	25,451
1921	25,451	1,122,336	1,215,823	31,964
1920	19,829 (a)	1,378,166 (a)	1,372,544 (a)	25,451

(a) Figures for *Boxboard* prior to March, 1920, were included under *Total Paperboard*.



Paradoxical Facts

Even to many engineers, the statement may seem paradoxical, that one of the cheapest things in a pipe system is the pipe itself. Of course, the engineer immediately recognizes the fact, but the corroborating figures showing analyses of the main items of cost in different pipe systems are, nevertheless, interesting to him.

Byers bulletin No. 38 is devoted to such analyses—throwing light on the subject of installation cost of pipe. It also contains estimates of replacement cost covering the same pipe systems, which reflect the poor economy of using pipe cheaper and less rust resisting than genuine wrought iron for service where corrosion has to be reckoned with.

Among such services may be mentioned hot and cold water supply, heating, steam drips, drains, and return lines, boiler blow-offs, soot blowers, condensers, compressed air, and many others.

Copy of Bulletin No. 38 will be sent free on request.

A. M. BYERS COMPANY, PITTSBURGH, PA.
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BYERS PIPE

GENUINE WROUGHT IRON
FULL WEIGHT GUARANTEED

Look for the Name and Year rolled in every length

Felts and Building Paper—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922, Stocks on Hand January 1st and December 31st, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive.

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
Felts and Building—	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
January	42	52	8,472	13,420	25,608	17,885	24,521	17,752	9,559	13,553
February	44	51	9,559	13,553	30,783	19,556	28,678	21,130	11,664	11,979
March	50	54	11,664	11,979	32,164	23,375	31,491	23,725	12,337	11,629
April	47	51	12,337	11,629	28,986	22,131	29,739	24,091	11,584	9,669
May	46	54	11,584	9,669	35,391	24,058	36,240	23,577	10,735	10,150
June	47	54	10,735	10,150	36,205	24,945	37,586	24,567	9,354	10,528
July	47	52	9,354	10,528	37,297	17,425	37,548	17,518	9,103	10,435
August	47	48	9,103	10,435	41,220	20,051	41,764	21,532	8,559	8,954
September	48	44	8,559	8,954	39,551	27,130	40,200	28,306	7,910	7,778
October	48	44	7,910	7,778	41,360	33,259	41,356	34,524	7,914	6,513
November	48	45	7,914	6,513	35,281	29,759	35,006	29,533	8,189	6,739
December	47	42	8,189	6,739	36,273	26,537	36,350	24,804	8,112	8,472

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	8,472	420,119	420,479	8,112
1921	13,420	286,111	291,059	8,472
1920	5,315	366,941	358,836	13,420
1919	7,699	281,962	284,346	5,315
1918	8,341	284,286	284,928	7,699

Other Grades—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922, Stocks on Hand January 1st and December 31st, and Total Quantity Produced and Shipped, by Years, 1918 to 1922, Inclusive.

Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
Other Grades—	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
January	92	94	19,563	17,160	23,682	17,682	23,329	16,606	19,916	18,236
February	90	94	19,916	18,236	24,394	14,760	24,447	13,461	19,863	19,535
March	104	94	19,863	19,535	29,035	16,218	27,968	15,671	20,930	20,082
April	107	95	20,930	20,082	24,309	16,061	25,418	16,158	19,821	19,985
May	107	98	19,821	19,985	25,196	14,120	26,400	13,863	18,617	20,242
June	105	99	18,617	20,242	26,047	16,366	25,118	16,028	19,546	20,580
July	105	100	19,546	20,580	24,600	13,190	23,730	13,844	20,416	19,926
August	105	100	20,416	19,926	26,951	17,241	27,142	18,394	20,225	18,773
September	105	96	20,225	13,773	25,916	16,139	25,593	17,437	20,548	17,475
October	109	96	20,548	17,475	27,471	22,613	26,882	20,542	21,137	19,546
November	106	87	21,137	19,546	27,093	23,038	26,915	22,374	21,315	20,210
December	102	89	21,315	20,210	26,739	22,846	25,007	23,493	23,047	19,563

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	19,563	311,433	307,949	23,047
1921	17,160	210,274	207,871	19,563
1920	12,482	313,387	308,709	17,160
1919	11,310	208,093	206,921	12,482
1918	13,382	264,869	266,941	11,310

Total for all Grades—Domestic Production, Shipments, and Stocks (Net Tons), by Months, 1921 and 1922, Stocks on Hand January 1st and December 31st, and Total Quantity Produced and Shipped, by Years, 1918 to 1922 Inclusive.

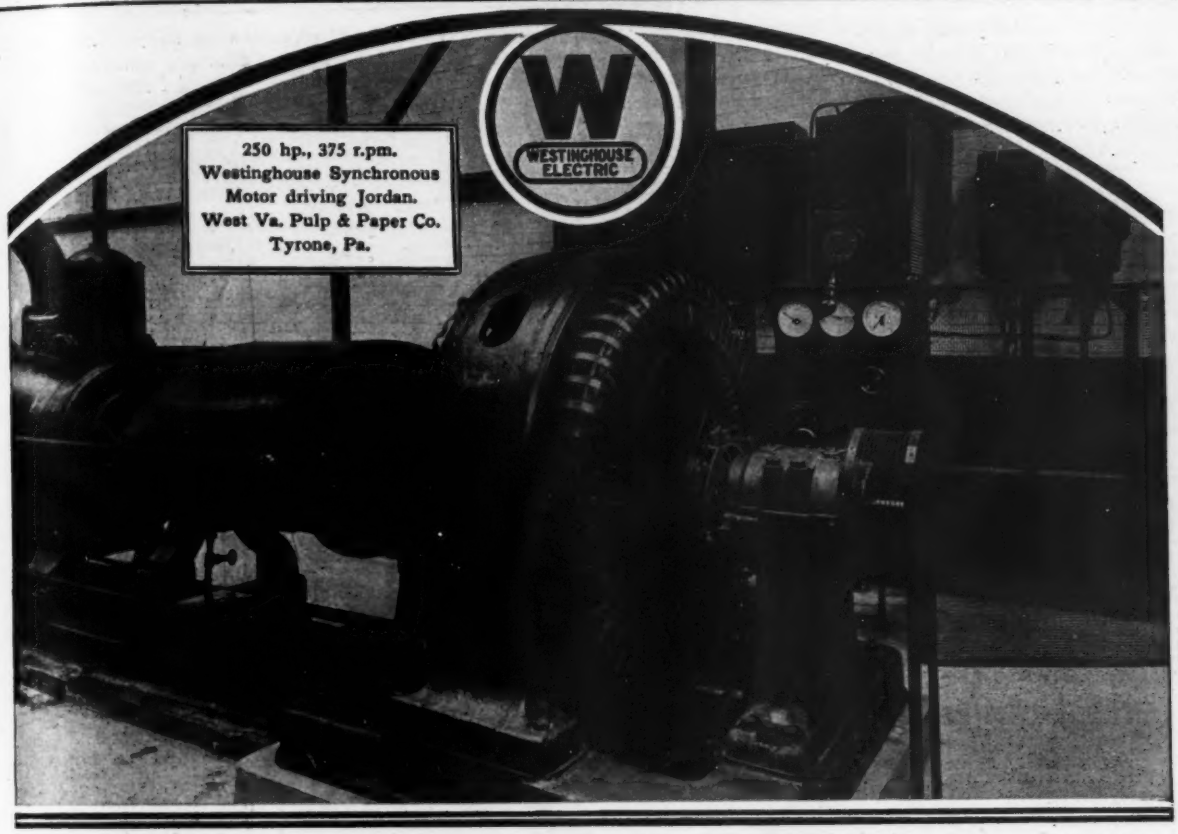
Grade and Month	Number of Mills		On Hand First of Month		Production		Shipments		On Hand End of Month	
Total for all Grades—	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
January	...	...	253,644	214,396	506,195	420,468	494,868	385,923	264,971	248,941
February	...	...	264,971	248,941	501,817	407,966	492,050	383,679	274,738	273,228
March	...	...	274,738	273,228	593,860	440,777	579,075	416,668	289,523	297,337
April	...	...	289,523	297,337	528,461	422,012	533,122	425,584	284,862	293,765
May	...	...	284,862	293,765	589,971	383,995	589,104	386,671	285,729	291,089
June	...	...	285,729	291,089	593,335	403,657	585,998	405,959	293,066	288,787
July	...	...	293,066	288,787	552,914	370,429	565,320	379,672	280,660	279,544
August	...	...	280,660	279,544	635,107	442,519	651,287	448,054	264,480	274,009
September	...	...	264,480	274,009	623,088	477,926	638,052	489,128	249,516	262,807
October	...	...	249,516	262,807	644,267	542,408	653,950	560,558	239,833	244,657
November	...	...	239,833	244,657	641,544	535,876	643,276	531,606	238,101	248,927
December	...	...	238,101	248,927	607,241	508,284	587,342	503,567	258,000	253,644

Year	On Hand January 1st	Total Production	Total Shipments	On Hand December 31st
1922	253,644	7,017,800	7,013,444	258,000
1921	214,396	5,356,317	5,317,069	253,644
1920	164,317	7,334,614	7,284,535	214,396
1919	199,860	6,190,361	6,225,904	164,317
1918	238,113	6,051,523	6,089,776	199,860

News Print Paper—Monthly Receipts, Consumption, Stock, and in Transit Tonnage, as Reported by Domestic Publishers of Publications with a Circulation of 5,000 and Over, 1922 and 1921; Total Receipts, Consumption, and Stock on Hand January 1st and December 31st, 1918 to 1922, Inclusive.

Month	No. of Concerns		On Hand First of Month		Received		Consumption		On Hand End of Month		In Transit End of Month	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
			Net Tons		Net Tons		Net Tons		Net Tons		Net Tons	
January	665	662	169,319	191,742	150,510	151,769	156,333	141,559	163,496	201,952	28,920	34,905
February	664	664	163,496	201,952	159,878	140,022	149,862	135,334	173,512	206,640	27,083	31,913
March	664	663	173,512	206,640	163,560	159,494	169,574	154,278	167,498	211,856	27,406	29,209
April	660	663	167,498	211,856	160,946	150,620	176,801	148,427	151,643	214,049	30,242	29,852
May	667	664	151,643	214,049	173,470	131,665	174,670	152,278	150,443	193,436	35,776	23,804
June	678	664	150,443	193,436	184,149	121,342	168,207	148,604	166,385	166,174	30,646	28,270
July	694	661	166,385	166,174	164,521	142,071	159,496	139,121	171,410	169,124	34,117	24,980
August	693	661	171,410	169,124	179,868	150,611	157,655	132,808	193,623	186,927	40,944	25,264
September	693	661	193,623	186,927	172,991	141,703	172,802	140,758	193,812	187,872	42,046	25,119
October	693	661	193,812	187,872	177,898	152,456	192,431	160,563	179,279	179,765	46,965	31,511
November	693	661	179,279	179,765	185,576	156,877	188,647	158,193	176,208	178,449	50,552	26,349
December	693	661	176,208	178,449	172,309	154,430	182,374	163,560	166,143	169,319	45,182	27,422

Year	On Hand January 1	Receipts	Consumption	On Hand December 31
1922	169,319	2,045,676	2,048,852	166,143
1921	191,742	1,753,060	1,775,483	169,319
1920	114,997	1,869,688	1,785,120	198,927
1919	184,529	1,632,758	1,705,091	115,047
1918	124,789	1,328,224	1,322,982	185,345



The use of Westinghouse synchronous motors for Jordan drive is followed by a marked improvement in plant power factor—

ADVANTAGES

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Percentage of Paper Increase

The following table gives for each grade of paper, the percentage of increase of production for the year 1922, compared with the year 1921, and the maximum and minimum quantity of stocks on hand at the mills during the years 1921 and 1922.

Grades	Per Cent of Increase of Production for 1922, Compared With 1921	Stocks on Hand at the Mills: Maximum Quantity During the Year		Stocks on Hand at the Mills: Minimum Quantity During the Year	
		Net Tons 1922	Net Tons 1921	Net Tons 1922	Net Tons 1921
Total news print	18	28,180	41,789	18,810	23,015
Standard news	19	23,298	35,517	14,687	18,227
Book	35	41,456	40,253	36,231	28,880
Total paperboard	29	71,986	70,780	52,968	57,169
Boxboard*	40	33,565	35,233	23,623	28,696
Wrapping	28	71,259	62,811	45,539	45,241
Bag	62	4,010	3,792	3,304	2,885
Fine	49	38,674	41,143	35,123	33,389
Tissue	33	10,767	9,122	7,036	5,811
Hanging	32	7,154	10,522	2,835	4,799
Felt and building	47	12,337	13,553	7,910	6,513
Other grades	48	23,047	20,580	18,617	17,475
Total for all grades	31	293,066	297,337	238,101	244,657

* Figures for *Boxboard* prior to March, 1920, were included under *Total Paperboard.*

Pulp—Domestic Production, Shipments, and Stocks (Net Tons), by Grades, 1918-1922, Inclusive

Grade and Year	On Hand Jan. 1	Production For Yr.	Used During Yr.	Shipped During Yr.	On Hand Dec. 31
Ground Wood Pulp—					
1922	123,080	1,481,935	1,428,631	109,991	66,393
1921	129,626	1,268,012	1,176,899	97,659	123,080
1920	139,304	1,578,300	1,456,198	131,495	129,626
1919	131,170	1,449,799	1,312,335	135,579	139,961
1918	145,567	1,303,403	1,229,288	88,512	131,170
Sulphite, News Grade—					
1922	21,240	720,103	651,926	70,433	18,984
1921	17,984	623,493	530,644	89,593	21,240
1920	20,046	843,514	717,986	126,261	17,984
1919	17,905	723,991	606,984	116,164	20,373
1918	21,546	744,944	645,794	102,841	17,905
Sulphite, Bleached—					
1922	6,748	477,187	308,239	163,691	12,005
1921	6,661	360,063	215,323	144,653	6,748
1920	6,810	578,081	316,037	262,213	6,661
1919	4,240	515,897	271,276	241,673	6,810
1918	12,180	484,525	256,407	236,058	4,240
Sulphite, Easy Bleaching—					
1922	868	59,950	49,633	9,630	1,555
1921	1,134	62,344	39,017	23,593	868
1920	1,314	72,394	45,309	27,159	1,134
1919	2,212	65,465	40,950	26,740	1,314
1918	1,451	80,730	58,897	21,072	2,212
Sulphite, Mitscherlich—					
1922	1,128	74,451	47,427	26,844	1,308
1921	2,768	60,005	41,365	20,280	1,128
1920	1,809	82,687	50,404	31,479	2,768
1919	1,489	79,353	47,895	30,571	1,809
1918	1,752	74,799	45,966	29,096	1,489
Sulphate Pulp—					
1922	7,657	256,107	187,023	72,097	4,644
1921	7,850	148,165	114,164	34,194	7,657
1920	5,753	212,888	144,926	65,601	7,850
1919	4,490	161,887	104,214	53,670	7,647
1918	1,284	167,438	100,552	63,680	4,490
Soda Pulp—					
1922	9,024	383,055	235,234	149,144	7,701
1921	6,507	272,287	174,102	95,668	9,024
1920	5,672	431,971	235,808	195,296	6,507
1919	3,395	377,473	217,351	158,002	5,672
1918	6,586	343,611	204,411	142,391	3,395
Other Than Wood Pulp—					
1922	178	11,470	9,451	1,486	711
1921	119	7,069	6,464	546	178
1920	240	7,821	6,788	1,162	119
1919	252	9,903	8,817	1,199	240
1918	178	12,898	10,804	2,020	252
Total for all Grades—					
1922	169,923	3,464,258	2,917,564	603,316	113,301
1921	172,649	2,801,438	2,297,978	506,186	169,923
1920	180,948	3,807,656	2,973,456	840,666	172,649
1919	165,153	3,384,768	2,609,822	763,598	183,826
1918	190,544	3,212,398	2,552,119	685,670	165,153

Note—The pulp used and shipped during each year represents pulp produced in the establishment using or shiping same.

The annual totals do not always balance, owing to corrections, received from the mills, affecting stocks on hand from month to month.

Percentage of Pulp Increase

The following table gives for each grade of pulp, the percentage of increase or decrease of production for the year 1922, compared with the year 1921, and the maximum and minimum quantity of stocks on hand at the mills during the years 1921 and 1922.

Grade	Increase or Decrease of Production for 1922, Compared With 1921: Per Cent of Increase	Increase or Decrease of Production for 1922, Compared With 1921: Per Cent of Decrease	Stocks on Hand at the Mills: Maximum Quantity During the Year: 1922 Net Tons	Maximum Quantity During the Year: 1921 Net Tons	Minimum Quantity During the Year: 1922 Net Tons	Minimum Quantity During the Year: 1921 Net Tons
Ground wood pulp	17	..	192,736	226,089	66,393	115,363
Sulphite, news grade	15	..	23,694	24,626	18,640	20,930
Sulphite, bleached	33	..	12,775	16,614	5,816	4,581
Sulphite, easy bleach	..	4	1,686	1,774	667	581
Sulphite, mitscherlich	24	..	2,748	3,990	1,308	1,064
Sulphate pulp	73	..	8,700	9,354	4,644	6,200
Soda pulp	41	..	11,323	10,390	6,535	6,281
Other grades	62	..	711	208	94	15
Totals for all grades	24	..	246,072	286,216	113,301	158,555

News Print Paper—Receipts, Shipments and Stock (Net Tons) of Domestic Jobbers, by Months and by Years, 1921-1922.

Month	News Print Paper	On Hand First of Month 1922	On Hand First of Month 1921	Receipts 1922	Receipts 1921	Shipments 1922	Shipments 1921	On Hand End of Month 1922	On Hand End of Month 1921
January	Rolls	2,298	3,046	8,889	6,869	9,305	7,002	1,882	2,913
	Sheets	4,262	6,432	2,592	2,640	2,743	2,751	4,111	6,321
	Total	6,560	9,478	11,481	9,509	12,048	9,753	5,993	9,234
February	Rolls	1,882	2,913	9,960	5,397	10,200	5,779	1,642	2,531
	Sheets	4,111	6,321	2,572	1,480	2,441	2,038	4,242	5,763
	Total	5,993	9,234	12,532	6,877	12,641	7,817	5,884	8,294
March	Rolls	1,642	2,531	10,878	6,873	11,114	7,292	1,406	2,112
	Sheets	4,242	5,763	2,992	1,642	2,730	2,457	4,504	4,948
	Total	5,884	8,294	13,870	8,515	13,844	9,749	5,910	7,060
April	Rolls	1,406	2,112	10,780	7,777	10,786	7,353	1,400	2,536
	Sheets	4,504	4,948	2,279	1,842	2,515	2,553	4,268	4,237
	Total	5,910	7,060	13,059	9,619	13,301	9,906	5,668	6,773
May	Rolls	1,400	2,536	10,929	6,384	10,862	6,540	1,467	2,380
	Sheets	4,268	4,237	2,511	2,408	2,808	2,827	3,971	3,818
	Total	5,668	6,773	13,440	8,792	13,670	9,367	5,438	6,198
June	Rolls	1,467	2,380	10,761	7,355	10,854	8,148	1,374	1,587
	Sheets	3,971	3,818	2,829	2,814	2,940	2,599	3,860	4,033
	Total	5,438	6,198	13,590	10,169	13,794	10,747	5,234	5,620
July	Rolls	1,374	1,587	10,543	8,484	10,499	8,511	1,418	1,560
	Sheets	3,860	4,033	3,042	2,120	3,170	2,218	3,732	3,935
	Total	5,234	5,620	13,585	10,604	13,669	10,729	5,150	5,495
August	Rolls	1,418	1,560	10,592	1,960	10,326	1,954	1,684	1,566
	Sheets	3,732	3,935	3,473	1,743	3,247	2,087	3,958	3,591
	Total	5,150	5,495	14,065	3,703	13,573	4,041	5,642	5,157
September	Rolls	1,684	1,566	10,528	5,792	10,322	5,595	1,890	1,763
	Sheets	3,958	3,591	3,476	2,290	3,069	2,415	4,365	3,466
	Total	5,642	5,157	14,004	8,082	13,391	8,010	6,255	5,229
October	Rolls	1,890	1,763	11,698	7,504	11,725	6,874	1,863	2,393
	Sheets	4,365	3,466	3,541	3,250	2,953	3,649	4,953	3,067
	Total	6,255	5,229	15,239	10,754	14,678	10,523	6,816	5,460
November	Rolls	1,863	2,393	11,367	5,941	11,641	5,936	1,589	2,398
	Sheets	4,953	3,067	3,628	3,255	3,134	2,387	5,447	3,935
	Total	6,816	5,460	14,995	9,196	14,775	8,323	7,036	6,333
December	Rolls	1,589	2,398	11,156	7,044	10,700	7,144	2,045	2,298
	Sheets	5,447	3,935	3,204	2,359	2,522	2,032	6,129	4,262
	Total	7,036	6,333	14,360	9,403	13,222	9,176	8,174	6,560

SUMMARY

News Print Paper	1922: on Hand Jan. 1	1922: Receipts	1922: Shipments	1922: on Hand Dec. 31	1921: on Hand Jan. 1	1921: Receipts	1921: Shipments	1921: on Hand Dec. 31
Rolls	2,298	128,081	128,334	2,045	3,046	77,380	78,128	2,298
Sheets	4,262	36,139	34,272	6,129	6,432	27,843	30,013	4,262
Total	6,560	164,220	162,606	8,174	9,478	105,223	108,141	6,560

Standard News—Weighted Average Open Market and Contract Prices per 100 Pounds, F. O. B. Mill, Paid by United States Publishers of Publications with a Circulation of 5,000 and Over, from January, 1921, to December 1922, Inclusive, and Per Cent of Increase, or Decrease, 1922 Compared with 1921.

Month	Open Market 1922 Dollars	Open Market 1921 Dollars	Per Cent Increase	Per Cent Decrease	Month	Contract 1922 Dollars	Contract 1921 Dollars	Per Cent of Increase	Per Cent of Decrease
January	3.685	6.945	..	46.9	January	3.756	6.076	..	38.2
February	3.581	6.279	..	43.0	February	3.629	5.921	..	38.7
March	3.601	5.623	..	36.0	March	3.615	5.862	..	38.3
April	3.548	5.206	..	31.8	April	3.570	5.409	..	34.0
May	3.548	5.056	..	29.8	May	3.541	5.248	..	32.5
June	3.475	5.129	..	32.2	June	3.574	5.227	..	31.6
July	3.551	5.013	..	29.2	July	3.540	4.770	..	25.8
August	3.643	5.160	..	29.4	August	3.522	4.762	..	26.0
September	3.660	4.185	..	12.5	September	3.504	4.586	..	23.6
October	3.789	4.070	..	6.9	October	3.605	4.188	..	13.9
November	3.830	4.170	..	8.2	November	3.788	4.194	..	9.7
December	3.873	3.666	5.6	..	December	3.604	4.102	..	21.1

George Washington

First in the hearts of his countrymen.

LAWRENCE GROCERS' BAGS

First in the hearts of all jobbers.

The date of this issue of the Paper Trade Journal—Feb. 22, 1923—marks the one hundred and ninety-first anniversary of the birthday of George Washington, the "first American." George Washington was the very soul of honor, standing for truth and integrity in all matters great and small.

The manufacturers of Lawrence Grocers' Bags have from the beginning, endeavored to instill into their business those same lofty principles. On this occasion then, we commemorate the anniversary of Washington's birth by re-asserting those principles, and re-affirming our intention and resolve to maintain truth and honor in our business as from the very beginning.

James Lawrence, President

THE LAWRENCE BAG COMPANY

MIAMISBURG, OHIO

Imports and Exports of Paper (Pounds and Value) and of Pulp (Net Tons), by Grades, 1918 to 1922, Inclusive (a) Figure for pulp given in long tons and reduced to net tons by the Commission.

PAPER

	1922		1921		1920		1919		1918	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Imports:										
News print	1,424,699,265	$50,054,310	1,584,962,674	$79,123,368	1,459,737,288	$68,600,950	1,255,462,866	$43,674,094	1,192,540,059	$35,023,16
Book paper	1,375,706	125,249	1,414,781	199,355	4,340,425	496,132	164,886	58,319	182,995	42,63
Wrapping	40,444,991	1,604,075	11,414,472	528,849	4,941,824	460,289	4,802,487	406,570	7,942,134	541,86
Hanging	.....	489,641	.....	363,269	.....	353,791	.....	104,326	.....	143,44
All other grades (b)	.....	2,127,642	.....	3,039,230	.....	2,741,238	.....	1,638,711	.....	2,541,15
Exports:										
News print	51,667,457	2,356,293	33,641,462	2,162,975	91,951,913	5,983,611	220,589,829	10,100,229	193,477,853	7,978,29
Book paper	30,113,057	2,815,959	40,167,065	5,892,609	95,689,512	13,765,694	153,327,185	16,160,777	99,220,241	8,710,94
Paperboard	.....	2,772,813	.....	2,323,949	.....	5,553,094	.....	4,604,048	.....	3,055,25
Wrapping	33,964,181	3,297,161	26,044,152	2,293,892	61,264,501	6,994,381	74,916,830	6,664,462	59,899,043	4,828,85
Bag	.....	994,895	.....	846,909	.....	2,593,459	.....	1,566,373	.....	884,41
Fine	.....	1,193,063	.....	4,355,642	.....	8,908,230	.....	13,178,165	.....	6,113,49
Tissue	.....	1,468,321	.....	1,080,380	.....	2,654,529	.....	2,237,570	.....	1,526,77
Hanging	.....	481,745	.....	590,549	.....	1,251,743	.....	899,457	.....	529,53
All other grades (b)	.....	4,421,394	.....	6,143,155	.....	11,091,952	.....	8,799,550	.....	6,170,60
Total imports	.....	54,400,917	.....	83,254,071	.....	72,652,400	.....	45,882,020	.....	38,292,26
Total exports	.....	19,801,644	.....	25,690,060	.....	58,796,693	.....	64,220,631	.....	39,798,17

PULP

Imports:	1922 Net Tons	1921 Net Tons	1920 Net Tons	1919 Net Tons	1918 Net Tons
Chemical Wood Pulp:					
Bleached sulphite	159,438	95,206	128,206	42,755	16,757
Unbleached sulphite	286,230	233,064	344,969	239,952	253,454
Bleached sulphate	8,292	4,082	17,277	5,145	3,759
Unbleached sulphate	198,171	174,004	182,697	145,911	118,761
Ground wood pulp	131,736	190,744	233,148	202,253	185,478
Paper stock other than wood pulp	162,057	117,405	254,755	110,195	29,397
Total	945,924	814,505	1,161,052	746,211	607,606

Exports:	1922 Net Tons	1921 Net Tons	1920 Net Tons	1919 Net Tons	1918 Net Tons
Domestic wood pulp	24,468	28,483	32,133	40,095	22,324
Rags and other materials made from vegetables fibres	37,868	20,206	42,282	27,271	16,121
Total	62,336	48,689	74,415	67,366	38,445

(a) Data furnished by the Department of Commerce. These data, for 1922, do not include import figures for October, November and December, for the reason that the import figures for these months are not yet available. (b) Includes some paper already converted into commercial articles.

Classifications Followed

Manufacturers report their production as nearly as possible in accordance with the following classification:

Total News Print includes Standard News and special grades of news print, but excludes hanging paper, which is shown separately.

Book includes all periodical paper and miscellaneous grades of machine finished, supercalendered, coated, etc.

Total Paperboard includes all grades of board, such as box, straw, chip, tag, press, fiber, binder, leather, etc.

Wrapping includes kraft, manila, fiber, and miscellaneous grades such as glassine, grease proof, etc., but excludes bag which is shown separately.

Bag includes paper made into flexible commercial containers such as grocery bags, flour sacks, etc.

Fine includes writings, bonds, ledgers, etc.

Tissue includes toilet, crepe, fruit wrappers, etc.

Hanging includes paper ultimately intended to be used for purposes of interior decoration, such as No. 2 hanging, oatmeal, tile, etc.

Felt and Building includes roofing, felt, sheathing, and other grades of building paper.

Other Grades includes a great variety of specialties that do not classify under any of the above captions.

Building Machine for Hammond Bag & Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., February 19, 1923.—The Bagley & Sewall Company has just started work on the manufacture of a modernly equipped 86 inch machine for the manufacture of paper for paper bags. The machine goes to the Hammond Bag and Paper Company of Wellsburg, W. Va., and will be ready for delivery on May 1.

T. H. Hammond, formerly superintendent of Taggart Brothers Company plant here, is president and general manager of the Wellsburg Company, and Merrit Davis, also of this city, is secretary. They broke ground last fall for the erection of a modern plant for the manufacture of bag paper and cement and flour bags and the mill will be placed in full operation about June 15.

Harry C. Kinne, salesman for the Bagley & Sewall Company, has visited the plant and says that when it is finished it will be the finest bag mill in the country, with everything new and up to date. The cost will be over $400,000. He says the factory is located near the coal mines where cheap fuel may be obtained and is also situated in the midst of great cement manufacturing business.

Good Demand for Paper in Boston

[FROM OUR REGULAR CORRESPONDENT]

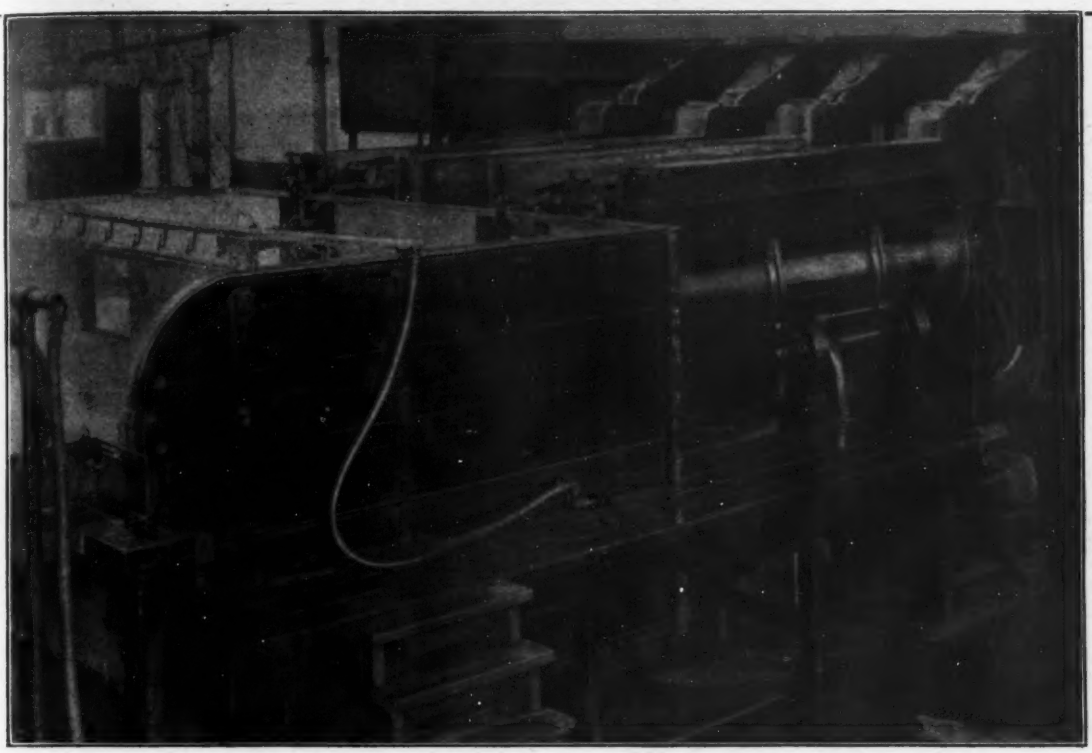
BOSTON, Mass., February 19, 1923.—Boston paper merchants report good business for the month of January although they state that weather conditions were responsible for business not being considerably better.

However, renewed efforts will be made by the Boston paper houses this month to get the business which the merchants feel is to be had. Prices have been stiff for some time and it has been expected that various increases would go into effect any day. However, the expected rises have not materialized as yet except in a few cases where prices have gone up a cent or so.

Mills are watching the situation carefully, Boston paper men say, and no big advance is expected right now although any increased costs due to the labor situation will probably be passed on to the consumer. Advances because of increased business and scarcity of supplies will not go any more, the mills realizing such action would not be accepted by the dealers, Boston men state.

Beckwith Mfg. Co. to Start Plant at Danvers

DANVERS, Mass., Feb. 19, 1923.—The Beckwith Manufacturing Company, which recently took over the paper mill, this place, formerly operated by the Essex Fibre Board Company, expects to start the manufacture of toe boxboard. Fred A. Livingston is superintendent of the plant.



The Fitchburg Paper Company Profits by Experience

The first Bird Screen to be installed at the Fitchburg Paper Company's mill five years ago has operated so successfully that it was only logical for them to equip their new 156 inch paper machine, installed last year, with the two Bird Screens illustrated above. These Bird Screens supply 30 tons of book paper stock daily to the paper machine.

An executive of the company says of the six Bird Screens which have been installed during the five year period:

"We run all book and coated papers of all weights, light and heavy, and never get any lumps or slugs—."

BIRD MACHINE COMPANY

SOUTH WALPOLE MASSACHUSETTS

Western Representative
T. H. Savery, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.
260 St. James Street
Montreal, Canada

12,000 TONS OF PAPER PASS THROUGH BIRD SCREENS DAILY

5031

SPURT IN DEMAND OCCURS IN PHILADELPHIA MARKET

Demand Is Especially Active for Printing Papers, Although Coarse Papers Also Are in Active Request—Small Reduction Is Announced in the Price of Chip and Other Lines of Board—Dee Paper Co. to Move Into Larger and More Desirable Quarters—Increasing Business Causes the Kalamazoo Vegetable Parchment Co. to Seek Larger Office Quarters—Ft. Wayne Co. In New Office.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, February 20, 1923.—A decided spurt in the buying of papers principally of the printing classification started in just ten days ago and the end is not yet. Wherever inquiry was made—at the Paper House of Pennsylvania, Riegal & Co., The Garrett-Buchanan Company, D. L. Ward Company, Charles Beck Company—to name but a few of the representative firms, there came the same report of entirely satisfactory business conditions and of a marked improvement during the last ten days although even before that there had not existed any cause for real complaint. While price advances met with criticism immediately after their announcement, this seems now to have died out.

In the coarse paper market demand continued to express itself in terms of an increased number of orders and of slightly larger average size. The interesting developments of the week was the reduction by a large local manufacturer of chip, news line vat board and of news board from $65 to $62.50 a ton and the reduction of 10 cents a roll on corrugated straw board. A large producer of coarse papers and of sheet writings notified the trade during the week that prices would be fixed at time of delivery, but this action is interpreted more as a precautionary move than as an indication of an advance. The paper stock market continued steady as to demand for all grades with the largest for the mixed and common sorts. While the mills readily took all that was offered, their needs were not sufficiently pressing to enable the dealers to secure any higher prices. The market is well cleaned up and an increase in mill requirements will stiffen and perhaps increase quotations.

Phil-Fibre Building Plans Postponed

Postponement of the building operations until this spring was made by the Phil-Fibre Company, Delaware and Tasker streets, owing to the inclement weather. The new building program calls for a reconstruction of the warehouse and shipping department which were destroyed by fire last fall. The new structure will entail a cost of $10,000 and will be an annex to the congeries of mills, warehouses, machine houses and other buildings already erected on the property. The mills are engaged in the manufacture of board, news chip and a full line of high grade folding box board.

Dee Paper Co. Expands

Additional quarters have been acquired by the Dee Paper Company, 227 Church street of which Max Dee is proprietor. Established two years ago the firm's business has expanded, necessitating double space to meet its needs. An additional floor just below its former quarters has been taken over and the firm now occupies the second and third floors. With the added space a larger stock of coarse and specialty papers and corrugated boxes will be carried. The sales force has been augmented by two more men, George Kaplan and George Taylor who will take care of Philadelphia and adjacent territories.

New Offices for Kalamazoo Co.

Larger offices necessitated by increased business demand have been secured by the Kalamazoo Vegetable Parchment Company represented in this city by E. L. Kelly and formerly located in Room 776 Drexel Building. The new office is in Room 640, Drexel Building. The firm produces a line of genuine vegetable parchment paper, wax paper, sulphite bond, ledgers and manifold stock. The local offices were opened a year ago by Mr. Kelly, who has been connected with the firm for ten years and who previous to his coming to Philadelphia was for four years connected with the sales force of the Chicago headquarters. Mr. Kelly announces that the telephone number of the new office is Lombard 1847, Bell and Main 1811, Keystone. He has been advised by headquarters that the newly constructed fifth mill of the company will be completed by the middle of the year.

De Jonge to Serve Box Trade

Arrangements have been made for the Philadelphia office of Louis DeJonge Company, 116 N. 7th street to take care of the paper box trade wants in this territory. Formerly the box trade was served from the New York office with W. F. Rauter covering the territory as salesman. For twenty-five years Mr. Rauter traveled for the firm through Philadelphia, Baltimore, Washington and Richmond, as salesman for coated papers and box makers specialties. Recently Mr. Rauter retired and Walter Doscher Philadelphia manager, was appointed to look after the territory which the retiring salesman formerly covered. He will be assisted by the other salesmen in the Philadelphia office.

The Diamond Paper Company, 229 North Third street, is planning to take over a larger home with the expiration of the coming year at the latest and possibly at an earlier date if desirable quarters can be found. The paper house is in direct line of the properties which are to be acquired by the city for the purpose of constructing the Philadelphia entrance to the Camden Philadelphia bridge now under construction, and therefore will have to give up its home on North Third street. When the new property is acquired the firm proposes to expand its business and to carry a larger stock of coarse papers, corrugated products, cardboard and other paper specialties. It was established four years ago by the present owners, Israel Dukes, Benjamin M. Zieve and Jules Agillis.

Fort Wayne Company's New Office

The Fort Wayne Corrugated Paper Company of Fort Wayne, Ind., has opened a Philadelphia sales office at 1023 Widener Building for the purpose of taking care of the Eastern territory sales. H. M. Treen, who for ten years was connected with the Sefton Manufacturing Company, box manufacturers is in charge of the office. The local headquarters were opened for the convenience of customers in this territory and will be devoted to the sales of corrugated products and fiber shipping containers.

Fire which caused a damage of $250,000 destroyed the entire paper box manufacturing plant of the John Crompton Company, Church street above Second on Saturday of last week. The fire which started in an adjoining shirtwaist factory completely demolished the building and destroyed stock and machinery of the Crompton Company valued at $100,000. E. Whitwel is president of the firm and plans are now under way to acquire another manufacturing plant, temporarily until permanent quarters can be obtained.

News Notes of Interest

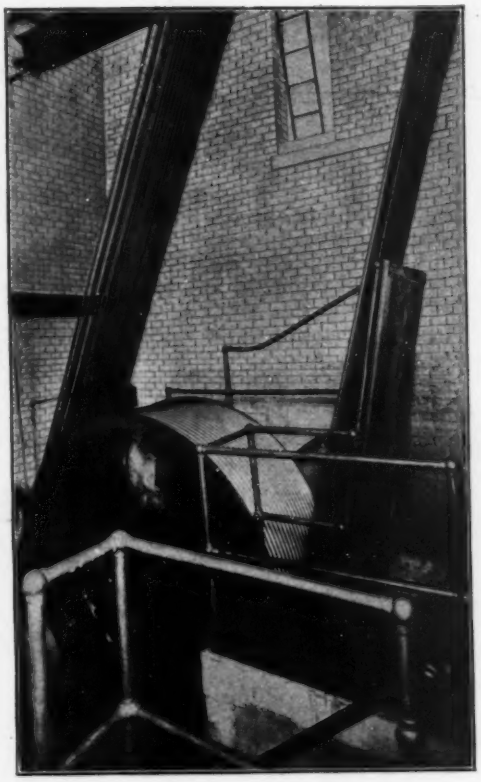
Eugene W. Fry of the Jessup & Moore Paper Company is a passenger on the *Mauritania* which sailed recently on a cruise known as the millionaires, because the vessel was chartered by a group of well-known financiers for an extended trip. Mr. Fry, however, will disembark at a Mediterranean port for a sojourn on the Reviera.

President Norbert A. Considine of the Paper House of Pennsylvania suddenly was called to New Orleans at the close of the last week because of the arrival there of a cargo of imported news on the firm's account which came into port damaged and the sud-

(*Continued on page* 28)

A Guaranteed Rope

for Your Drive



The reason rope drives replace other types is to eliminate slippage, facilitate the transmission of power around odd angles, and for economy's sake. The decision to use a rope drive, however, does not end the matter, as there are ropes and ropes—yet there is only *one* of the various makes which carries the famous red, white and blue *Tape-Marker* Guarantee, and that is Columbian!

"What is this Guarantee?" you ask. It is the manufacturer's pledge to jobber, dealer and user alike, of Quality Rope, tangibly guaranteed by means of the colored marker, which, when untwisted, shows the words "Guaranteed Rope, made by Columbian Rope Co., Auburn, N. Y." This marker is in one continuous piece, just as long as the rope containing it.

Specify Columbian *Tape-Marked* Pure Manila and look for the red, white and blue *Tape-Marker* when installing a new drive or renewing your present one.

By Invitation Member
Emblem of BUSINESS CHARACTER
Rice Leaders of the World Association
Recognizing High Standing in NAME-PRODUCT-POLICY

Columbian Rope Company

342-60 Genesee Street

Auburn, "*The Cordage City*," N. Y.

Branches:

New York Chicago Boston Houston

RED WHITE BLUE — MADE BY COLUMBIAN ROPE CO. AUBURN, N.Y. — GUARANTEED ROPE — ASK FOR "COLUMBIAN" TRADE MARKED ROPE — RED WHITE BLUE

NEKOOSA-EDWARDS CO. STARTS WORK ON TWO MACHINE MILL

Structure Is Expected to Be Ready for Installation of the Machinery by May 1—Matter of Increasing Water Power at Stevens Point which was Suggested Recently By the Consolidated Water Power and Paper Co. Still Continues to Be Discussed, Although the Company Has Announced That It Will Install Its New Machine at Its Biron Plant—Kimberly Clark Co. to Build Clubhouse.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 20, 1923.—Construction work on the building which will house the two new paper machines to be installed at the Port Edwards mill of the Nekoosa-Edwards Paper Company will be started at once so that the structure will be ready for installing the machinery by May 1. The start of the work probably will be delayed a few days by the terrific blizzard which swept over the state last week, tying up transportation and causing some damage.

Material for the new building has arrived at Port Edwards and machinery for building is on its way. A three story warehouse will be built in connection with the new machine room. C. R. Meyer & Sons Company of Oshkosh have the contract for the construction work.

Water Power at Stevens Point

Although the Consolidated Water Power and Paper Company of Wisconsin Rapids has formally announced that the new paper machine which was to have been installed either at Stevens Point or at Biron will go to the Biron plant, Stevens Point citizens and officials still are arguing the proposition made by the Consolidated Company that the city assist in securing a higher head of water at the Stevens Point dam. At a mass meeting last week, a resolution was adopted calling upon the city to maintain an attitude of strict neutrality. It also provides that the Consolidated Company should defer all the expense of raising the head of the dam, pay for the public improvements which are necessary to avoid damage to property near the river and the company should be held responsible for damages which might result from the higher head of water.

Mayor Welsby of Stevens Point told the audience at the mass meeting that he didn't believe the Consolidated Company would put the machine in the Biron mill in spite of the company's announcement. It also was hinted that the company has other plans than installation of the machine at Stevens Point and that it still is desirous of increasing its waterpower at the Point city in spite of the declared intention of making improvements at Biron.

Kimberly-Clark Co. to Build Club House

The first unit of a commmity club house is to be built at Kimberly by the Kimberly-Clark Company it was announced following a meeting of the Kimberly mill council. The first unit will cost approximately $30,000 and that sum has been appropriated by the company. Additional units will be built as necessity requires, it was said. Work on the structure will be started as soon as weather conditions permit.

The plan has been under consideration by the company since 1920 but conditions were not favorable for starting the work until this year. The need for a community center and place of recreation at Kimberly is so great that the first unit will be started at once.

Management of the club house will be under direction of the Kimberly mill council. A superintendent will be furnished by the company.

The first unit will include a gymnasium, classrooms, baths, and lockers. The gymnasium also will be used as an auditorium. The building will be similar in some respects to the community house which the company built at Niagara and which is a social and recreational center in the mill city.

G. M. Hafenbrack Leaves Nekoosa-Edwards Co.

G. M. Hafenbrack, assistant employment manager of the Nekoosa-Edwards Company, will leave the company soon to become associated with the Burroughs Adding Machine Company at its Seattle office. Mr. Hafenbrack, in addition to his duties in the employment department, was managing editor of the NEPCO Bulletin, the mill paper, and was secretary of the employees' mutual benefit association. He has been with the Nekoosa-Edwards Company about four years.

Westminster Mills Ship First Paper

The Westminster Paper Mills, Ltd., organized by Wisconsin and Eastern Canada paper mill men, shipped its first carload of paper to Winnipeg last week and the shipping was made a gala event at New Westminster, British Columbia, where the mill is located. The company began operating late in December and the machines have been running continuously since. Tissues and lightweight papers are being made.

It is said that preparations will be started soon for making fruit wrappers to supply the demand in British Columbia. In spite of the high wage scale the company believes it can successfully compete with American and Eastern Canadian mills because of the proximity of the raw material and the preference in railroad rates which British Columbia concerns enjoy.

PHILADELPHIA MORE ACTIVE

(*Continued from page 26*)

den death of the firm's broker who had intended to make a survey, which President Considine now himself must make.

Riegel & Co. have just added to its stock a line of cut cards for the printing trade. They are carried in many weights.

The Charles Beck Company, 6th and Chestnut streets, is now stocking the complete line of Baypath Covers in which there are included 128 items. The additional account was taken on in an extension of service to the printing trade.

Installs Machinery

An additional slitting machine recently has been installed in the cutting department of the H. J. Fleming Paper Company, 1017 N. Front street. The new equipment will be devoted to the cutting of small roll products for adding machines, die-wiping, ticker rolls and allied lines and will enable the firm to increase production along these lines.

J. F. Wilhelm, representing the Beck Machine Company, 609 Chestnut street is on an extended trip through New York State visiting the paper box trade in that district. The Beck Company shipped large quantity of machinery to the Allentown Paper Box Company, whose box making plant recently was destroyed by fire.

Penn Paper Co. Capital Stock Sold

ERIE, Pa., February 19, 1923.—The Capital stock of the Penn Paper Company, of Erie, Pa., was taken over conjunctively on February 7 by L. F. Houpt and F. J. Smith, president and vice-president respectively of the George Irish Paper Company, and B. S. Munch, formerly of the George Irish Paper Company, but more recently connected with the paper industry in Pittsburgh, Pa., and Walter T. Evans of Du Bois, Pa.

The company has a capitalization of $50,000 and has taken a ten years' lease on a new concrete warehouse with truckage located at 2001-2003 Parade street. Newly elected officers consist of the following: B. S. Munch, president and general manager; L. F. Houpt, vice-president; F. J. Smith, secretary and treasurer. Directors, the above officers and Walter T. Evans.

The 106-in. Improved Wolf Chipper showing disc arrangement.

The Chipper *that* Reduces Sawdust *to* Less *than* One Per Cent

This feature alone makes the 106" Improved Wolf Chipper a cost saving piece of equipment. Combined with this are uniform chips, unique safety devices, low power consumption, more production, and mechanical features that do away with much of the wear and the resulting repairs necessary on the old chipper.

Write for further information and let us send you more actual mill experiences like the one reproduced herewith.

Valley Iron Works Company

Plant
Appleton, Wis.

New York Office
350 Madison Ave.

AN ACTUAL MILL TEST

(Name of Mill on Request)
(Test made on hemlock with 20" spout)

Running time	8.25 *Hrs.*
Total Cords	118.29
Cords per hour	14.37
B. D. wt. of wood	293,702
B. D. wt. of sawdust	2,000
Lbs. sawdust cord B. D.	16.9
Per cent Sawdust	0.68

CANADIAN PULP AND PAPER BENEFIT BY FRENCH TREATY

If the Treaty Is Ratified Canada Will Obtain the Minimum Tariff on Wood Pulp—In the Past Canada Has Exported Considerable Quantities of Pulps to France But Her Exports of Paper Have Been Small and Relatively Unimportant—Wayagamack Pulp and Paper Co. Holds Annual Meeting and Elects Officers and Directors—Frank J. D. Barnjum Offers More Forestry Prizes.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., February 19, 1923.—Hopes of another new market for Canadian Pulp and Paper are raised by the fact that these are included in the list of commodities which will benefit theoretically by the new trade treaty with France now awaiting ratification. Whether the industry will benefit practically is a matter which can only be decided by experience but it is not generally expected that the benefit will be very substantial. If the new trade treaty is ratified, Canada will obtain the minimum tariff on wood pulps which will be as follows:

Mechanical dry, per 100 kilos—Fr. 1.00
wet " " " — " 0.50
Chemical Pulp " " " — " 2.00

(1 fr. per 100 kilos at present exchange equals about $0.64 per 2,000 lbs.)

The main divisions for paper in the French tariff are the following:

Paper weighing more than 30 grammes per sq. metre; Fr. 10.00 per 100 kilos;

Paper weighing more than 30 grammes or less per sq. metre; Fr. 15.00 per 100 kilos.

(30 grs. per sq. metre is equivalent to 18.5 lbs. per 500 a. 24 x 36 ins.)

So called "fancy papers" are subject to duties from Fr. 15.00 to Fr. 60.00 per 100 kilos.

According to this schedule, news print, wrapping, book papers, etc. over 18.5 lbs. basis would be subject to a duty of 10 francs per 220.4 lbs. and all lighter weights to a duty of 15 francs per 220.4 lbs.

10 francs per 220.4 lbs. is equivalent at present exchange to approximately $6.35 per 2,000 lbs.)

In the past, Canada has exported considerable quantities of pulp to France but her exports of paper have been small and relatively unimportant. At the present most of the wood pulp used in France is imported from Scandinavia, as is also a considerable amount of news print. Last year Canada's exports of mechanical and chemical pulp to France reached a total of over 45,000 tons, valued at $1,516,817.

The Price of Timber Limits in Quebec

In a note in this column last week, on the sale of timber limits on the north shore of the St. Lawrence to the Ontario Paper Company, of Thorold, operated by the Chicago *Tribune*, the price was quoted to be $3.35 per square mile instead of $3.35 per thousand feet, this being, of course, as stated, in addition to the stumpage tax now imposed of $2.70 per thousand feet, a total of $6.05. It is stated here that forestry engineers figure out this price as practically doubling existing prices paid on Government limits, and that as a result very important changes may be made in the near future in re-valuing limits held by the pulp and paper concerns. In place of the old cost of $1,500 a square mile the basic cost was reduced to $400, but the increased stumpage dues work out at $6.05 per 1,000 feet or $3.02½ a cord, compared with $1.40 a cord, the old rate. A cost of $400 per square mile is equal to 6½ cents per cord, as compared with $1,500 a mile or 25 cents a cord. The new stumpage raises the 6½ cents to $3.09 per cord compared with the old rate of $1.65 per cord. Thus the valuation now set on the pulpwood in the form of standing timber is over $2,500 a square mile. The increased stumpage will mean in excess of ten millions of dollars extra for the one limit of 2,000 square miles providing there are no bad burns in future on the limit. It is understood that the second tendered represented Lord Rothermere, brother of the late Lord Northcliffe and publisher of the London *Daily Mail*.

Wayagamack Annual

The annual general meeting of the shareholders of the Wayagamack Pulp and Paper Company, Limited, was held at the head office of the company, Three Rivers, during the week. The following were elected directors: Norman J. Dawes, G. H. Duggan, Hugh Mackay, K. C., Alex. Maclaren, Sir. Wm. Price, Jas. W. Pyke, and C. R. Whitehead. At a subsequent meeting of the directors, C. R. Whitehead was elected president, and Jas. W. Pyke, vice-president.

Frank Barnjum Offers More Prizes

Frank J. D. Barnjum, of Annapolis, Royal, N. S. and Montreal, who recently awarded $5,000 in prizes for the best treatise on the most practical methods of preserving Canadian timber from further destruction by the budworm and other insect pests which have recently caused such great losses to our forests, is now offering $2,000 in prizes for the most convincing argument in favor of prohibiting the export of unmanufactured wood from Canada.

Tree Planting on the Prairies

The rapid development of tree seedling distribution in Western Canada is indicated by a report issued by the Dominion Forestry Branch, which shows that in 1901, the first year in which this work was undertaken 58,000 seedlings were distributed to the farmers; 1902, 466,000; 1904, 1,800,000; 1917, 7,664,000. All these seedlings were distributed from the Indian Head and Sutherland Nurseries. In the past 20 years over 66,000,000 seedlings and cuttings have been set out. It is said there are 40,000 shelter-belts in the territory, valued at from $500 to $5,000 each, and a conservative estimate puts their valuation at $12,000,000.

Sir Frederick Becker's Visit

The visit of Sir Frederick Becker to Montreal has been connected with important negotiations that are likely to result in industrial financing on an unusual scale in the not distant future. It is understood that efforts are being made to fund the outstanding securities of the Saguenay Pulp and Power Company and other associated companies. A start was made in clarifying the financial situation of the old North American Pulp & Paper Companies Trust when the Saguenay Pulp and Power Company's issue of $5,500,000 was made in 1919. It has been felt, however, that the whole organization is still a little unwieldy and that further consolidation which would include the Ha Ha Bay Sulphite Company as well as the Chicoutimi and other properties would be advantageous.

Control of the Grand Falls

The following statement has been issued by the Board of Trade of Grand Falls, N. B., regarding the control of the Grand Falls, in which the International Paper Company has an interest "The Grand Falls Board of Trade is still receiving communications from towns situated in different parts of the province, endorsing the stand that this board has taken to oppose firmly any further extension being granted to the present holders of the rights controlling the great natural water power at Grand Falls. The people of the province are aware that their interest in this great asset must be protected if they expect to enjoy the benefits to be derived from such if properly handled. In justice to themselves and to the program of New Brunswick the people cannot and will not stand for any more dilly-dallying."

PAPER INDUSTRIES EXPOSITION

GRAND CENTRAL PALACE NEW YORK

Week of APRIL 9th 1923

Featuring the paper making industry from forest to the finished product

This Exposition is the first in the history of the country entirely and exclusively devoted to the paper industry, its machinery and the materials used in the production of paper, as well as the finished paper and its products.

Manufacturers of Pulp and Paper will see the latest inventions in machinery and apparatus that will enable them to produce more and better paper at less cost.

Manufacturers of Paper-making Machinery will have representatives in attendance to demonstrate the new inventions and describe modern methods and processes.

Merchants of Pulp and Paper and the great consumers — Printers, Lithographers, Stationers, Advertising men and Purchasing Agents will want to see exhibits of all grades of paper and paper products and learn the processes of their manufacture.

No person or firm connected in any way with paper products, either as a manufacturer, merchant or consumer, can afford to neglect this great Exposition. Come and learn how to improve yourself. Come to show those who depend upon you what you are doing for them.

For further particulars, address

Paper Industries Exposition

Grand Central Palace **New York**

MICHIGAN TRADE NEWS OF INTEREST TO PAPER MEN

Officers, Superintendents and Foremen of the Allied Paper Mills Hold Conference at the Park-American Hotel—Thomas Fay, Beater Room Man at the Kalamazoo Vegetable Parchment Co.'s Mill Has Life Insurance Made Over to K. V. P. Sick Benefit Association—Hugo Harlig, Large German Pulp Exporter, Visits Trade in Kalamazoo—Central Paper Co. to Build.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., February 19, 1923.—Thirty-two officers, superintendents and foremen of the Allied Paper Mills held their regular monthly conference and dinner the past week at the Park-American Hotel. At the previous meeting President Alex. G. Gilman had appointed George H. Gerphide, vice-president; J. W. Powell, sales manager, and E. T. A. Coughlin as a committee in charge of the meeting. Mr. Gerphide presided. E. Southward, of the Bardeen division shipping department and George Keats, chief engineer of same division, were the new members introduced.

Mr. Gilman announced the appointment of Herbert De Young, of the King division, as chief master mechanic in charge of maintenance of all plants. A general discussion of Allied Paper Mills interests followed the dinner, many interesting suggestions being brought forward.

The Dependable Club was organized last fall by Alex. G. Gilman, the idea being to bring together regularly, officers, superintendents and foremen of the Allied mills in regular dinners and conferences, thus tying up the organization more closely, promoting good fellowship and for the improvement of the qualities of all grades of paper manufactured by the various divisions. Since its organization the club has made rapid strides. As result of the meetings held each month numerous minor as well as major policies have been put in force and are now in use in one of the many departments of the big concern.

President Gilman has named W. H. Oliver, chief accountant; William Carroll, superintendent Bardeen division and Frank Jessup, head of the manufacturing department, as committee in charge of arrangements for the March meeting of the club.

Gives Insurance to Benefit Association

Believing firmly in the principles and workings of the K. V. P. Sick Benefit Association, Thomas Fay, beater room employee at the Kalamazoo Vegetable Parchment Company's mill, has asked to have his company's life insurance policy for $500 made payable to the benefit of the association in case of his death. His wish in this regard has been granted and action taken to that end. The Kalamazoo Vegetable Parchment Company insures all its employees, who have been with the concern over six months. The policies start at $500 and increase in value to $1,000.

General News of the Trade

Adrian Hartoog, for years with the engineering department of the Kalamazoo Vegetable Parchment Company, is leaving to accept a similar position with one of the large industries in Detroit.

Hugo Hartig, Germany's largest pulp exporter, was the guest the past week of Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company.

S. B. Monroe, A. B. Connable, C. A. Peck and C. S. Campbell were in Toronto this week, attending the annual meeting of the Provincial Paper Company. Mr. Monroe and Mr. Connable then joined their families and certain friends to sail on the Royal Mail Steamship *Oryca* on a cruise to the West Indies.

The Ford Motor Company's board mill at River Rouge, which started operations about a year ago, is planning to install a wood cooking process, which will materially increase production. Mill officials report that finished cardboard to the amount of 3¼ tons a day are now turned out, waste paper and rags being used.

The American Paper Box Company, Saginaw, will establish a branch in Bay City. The Chamber of Commerce of the latter city is now looking for suitable quarters for the new industry.

The Plainfield Paper Company is the name of the concern now occupying the mill at Childsdale, Mich., near Grand Rapids. The officers are: President, Burke M. Baxter; vice-president, Emory C. Prior; secretary, N. C. Root. The above three are from Cleveland, Ohio. C. E. Spangler, formerly with the MacSimBar Paper Company, Otsego, is treasurer and manager of the concern.

McRob Envelope and Paper Specialties Company, Detroit, capital $25,000, has filed articles of incorporation. Manufacturing and merchandising are to be engaged in.

The Central Paper Company, Muskegon, has been granted permission by the city engineer to erect six structures to expand its present plant and increase its daily capacity from about 60 to 120 tons. There will be one building 165 feet by 50 feet; one building 150 by 75 feet; one building, 50 by 40 feet; one building 270 by 50 feet; one 45 by 90 feet and one 90 by 90 feet. They will be of brick and concrete.

New England Paper Box Men Meet in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 19, 1923.—The fourth annual convention of the New England Division of the National Paper Box Manufacturers' Association was held at Young's Hotel Tuesday and Wednesday, February 13 and 14. The convention was featured with a cost forum under the direction of E. R. Spaulding, chairman of the Cost Committee of the New England Division.

"National Association Cost System and an Analysis of the Fundamentals of Overhead" was the subject of an address by F. H. Figsby of New York. Other addresses were made by H. O. Alderman, E. C. Wentworth, Frank H. Thompson of the Dennison Manufacturing Company of Framingham and Boston, Joseph H. Perry and R. I. Rhodes.

Tuesday's session was closed with a banquet and an entertainment in the evening while an entertainment at the Boston Athletic Clubhouse under the auspices of the Boston Karton Club and local supply houses closed the convention Wednesday evening.

Reports made by the various paper box men showed that the demand for paper boxes this month has been a bit less than the demand for last month although the demand for boxes for the Easter holiday trade, especially from the candy houses, was very brisk.

Taken on the whole, it was stated the demand for paper boxes is much better this year than it was last year in spite of the fact that boxboard prices have gone up considerable, in some cases as much as 100 per cent. The reason given for this increase is the rise in prices of waste material from which box board is made. In some cases waste materials are commanding prices as high as the finished product was six or eight months ago.

Low Flow in Black River Handicaps Mills

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., February 19, 1923.—Black river was never at such a low flow as at the present time, according to manufacturers, and industrial production is greatly handicapped. In fact some of the plants are scarcely able to operate at all. The lack of rains this winter has reduced the flow, and for several weeks the severe cold weather has practically frozen up the brooks that contribute to the flow. Thaws within the next few weeks are awaited with anxiety by manufacturers, especially the paper mill men who are most seriously affected.

Established 1886

A Point of Honor

A contract with this company is more than a signed instrument—it is a guarantee that both the spirit and the letter of our agreements will be complied with.

In a word, we believe that financial resources alone are not adequate; they must be backed by high moral responsibility and an intimate knowledge of all problems involved.

This business creed has been safe-guarding the interests of our customers for more than thirty-five years.

M. GOTTESMAN & COMPANY

—INCORPORATED—

18 East 41st Street

New York, N. Y.

U. S. A.

TORONTO PAPER MERCHANTS REPORT QUIETER DEMAND

Falling Off in the Request for Paper so Far as the Jobber Is Concerned Is Accounted for by Adverse Weather Conditions—Mills Continue Very Busy, Practically All of Them Running to Capacity—Prices Continue Unchanged with the Exception of a Slight Reduction in Tissue Which Was Made to Meet American Competition—Alex Buntin Leaves Large Estate—Waxed Paper Plant to Be Sold.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 19, 1923.—Business with the jobbers has fallen off considerably during the past few days owing to the extreme cold weather and heavy storms, coupled with a large amount of sickness, scarcely a home escaping without some member having the flu. The mills continue very busy and are running to capacity. Jobbers, however, expect that trade will pick up as soon as the weather moderates and the epidemic of illness is at an end.

There have been no changes in prices with the exception of a reduction of five to ten cents per ream on tissues which step was taken to meet American competition, particularly in the cheaper grades which have been coming rather heavily of late. Coated paper manufacturers held a meeting during the past week to talk over prospects and, although rumors of a raise have been in the air, prices were left unchanged for the present.

There has been a falling off in the pulp business during the past few days. Ground wood is the most active and is quoted at forty-five to forty-six dollars at the mill. Other lines in the paper business are moving along satisfactorily.

Paper Box Business is Dull

There has been a drop in the paper box business and the recent advance of ten dollars per ton on board by the mills has helped to make matters worse. Consumers have backed up on orders to some extent. A meeting will be held in Windsor this week to discuss the state of affairs. It seems a great many consumers in the Border cities have been making their purchases across the line, contending they can buy cheaper there although the Canadian manufacturer is protected to the extent of a customs tariff of thirty-five per cent.

Mr. Buntin Left Large Estate

Alex Buntin, head of Buntin, Reid Company, wholesale paper dealer, Toronto, who passed away on December 11 last, left a large estate, valued at over $300,000. The bulk of it goes to the members of his family. Some employees of long service are given $1,000 each. Mr. Buntin directed that the business, which he owned, should be carried on and that the directors should consider at an early date the advisability of converting it into a limited liability company or disposing of it.

Retirement of Alfred Jephcott

R. A. Dunlop, who for years has been associated with the Dominion Paper Box Company, Limited, 469 King street west, Toronto, has been appointed head of the firm. He succeeds Alfred Jephcott who has retired after forty-five years of active association with the business. Mr. Jephcott always took much interest in the paper box business and many friends in the trade will wish him many years of health and happiness.

New Port Arthur Mills Nearly Ready

It is expected that the new book paper mill of the Provincial Paper Mills, Ltd., at Port Arthur, Ont., will be turning out paper by the end of the present month. The output will be from twenty-five to thirty tons daily and many specialties will be made. The western market will be specially catered to. The equipment is now in place and power has been turned on. A. G. Pounsford is general manager of the plant and also manager of the sulphite mill of the company at Port Arthur, which has been in operation for several years. The new mill is one of the most modern in Canada.

Provincial Paper Profits Maintained

The unsettled conditions in the paper trade during the past year had very little effect on the earnings of the Provincial Paper Mills, Limited, whose headquarters are in Toronto, according to the annual report which has just been brought down. Most of the demand was for the lower grades of paper, and what the company lost by the small margin of profit on these lines, it made up by practically working full time throughout the year at the plants which are located at Mille Roches, Thorold, Georgetown and Port Arthur. The gross profits from operations, which were $729,261, show a slight increase when compared with $728,775 for the previous year. With interest and dividends received of $34,700, the total income was brought up to $763,961. The net earnings of $708,173 show a slight decrease due to increased interest charges. After making all allowances for depreciation, taxes, contingencies, etc., and paying preferred dividends, there was $369,173 available for the common. This is equal to ten and half per cent on the outstanding $3,500,000 common stock.

Waxed Paper Plant Will be Sold

The plant of Waxed Paper Products, Limited, 43 Britain street, Toronto, is being advertised for sale by the authorized trustee, J. P. Langley, Toronto, and tenders will be received up to March 6. The company has several secret processes for the manufacture of carbon paper and typewriter ribbons and rights of manufacture of machines of a special waxing character. It is likely that the industry will be continued.

May Now Reforest Land

A deputation from the Associated Boards of Trade for Ontario waited upon the provincial government during the past week and urged the importance of reforestation. Premier Drury, among other things, pointed out that there was provision where municipalities obtained the land, the government would do the reforesting and the municipality would own the property. It is expected a number of counties will under reforestation work under the present plan.

Notes and Jottings of the Trade

The Calgary branch of Barber-Ellis, Limited, Toronto, had a narrow escape from serious loss by fire during the past week when a quarter million dollar blaze broke out in an adjoining building. The John Martin Paper Company, whose premises are contiguous, also had a close call.

John F. Ellis, of Toronto, former president of the Canadian Paper Trade Association, and the dean of the wholesale paper trade in the Dominion, has been appointed vice-president of the Crown Life Assurance Company, in succession to Mr. Justice Mowat.

H. C. Hocken, M. P., Toronto, who is a well known publisher, has given notice in the Canadian House of Commons at Ottawa, that measures should be adopted to encourage the publication of Canadian magazines and periodicals.

C. Nelson Gain, sales manager of the Don Valley Paper Mills, Toronto, who has been confined to his home for some time by illness, is able to be at his desk again.

George Marshall, a veteran paper salesman for the Canada Paper Company, Toronto, with which firm he was associated twenty-one years, died on February 10 as a result of an attack of pneumonia. He was sixty-five years of age and widely known to the trade in London, Hamilton and Toronto.

A charter has been granted to the Port Elgin Box Company, Port Elgin, Ont., with an authorized capital stock of forty thousand dollars and power to produce all kinds of boxes, cartons and containers.

Forced to the Limit

Making Paper at High Speed the Machine Tender often forces his machine to the Limit.

At such times it is a test of the design, workmanship and material.

In the recent record Speeds of Beloit Machines, maintained for days and weeks at a time, the above elements have withstood the Limit successfully.

BELOIT IRON WORKS

BELOIT, WIS., U. S. A.

GRAPHIC ARTS DINNER IS SUCCESS IN PHILADELPHIA

Record Breaking Attendance at the Dinner Held Under the Auspices of the Philadelphia Paper Trade Association and the Typothetæ of Philadelphia at the Manufacturers' Club—Novel Seating Arrangement Serves to Promote Good Fellowship—William T. Innes of the Typothetæ Acts as Toastmaster—Addresses Are Made by Mr. Ward, Dr. Norwood, and Others.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 20, 1923.—Record breaking from the viewpoint of numbers, with an attendance of 560 by actual count, the Graphic Arts Night banquet held under the auspices of the Philadelphia Paper Trade Association and the Typothetæ of Philadelphia in the Manufacturers' Club on Wednesday evening of last week, attained a higher plane of good fellowship among men who are intimately associated in business, but rarely meet each other personally than any function ever held in trade annals. Development of sociability, cementing of the ties of comradeship and co-operation which were made when during the course of the year. Paper distributors and printer sat down to discuss trade relations and evolved from that what is known now as the Philadelphia Plan, was the sole object of this notable gathering of all engaged in the industry. That object was attained and in abundant measure, for during a happy evening, enlivened by singing to the accompaniment of an orchestra, and distinguished by the presence of noted speakers and their inspirational messages paper distributor and paper user, whether as printer, stationer, photo-engraver, electrotyper, paper ruler, bookbinder or writer and paper conservator repesented by members of the Philadelphia Paper Stock Association, came into intimate personal contact as on no other occasion ever held. This was made possible by an entirely unique arrangement. The alternation of guests from table to table three times during the course of the evening so that each diner had opportunity to come into closet relationship and under the most favorable conditions with at least thirty-two business patrons supplementing the big gathering and comingling which too place among the 560 participants in informal meeting while awaiting the opening of the doors to the banquet room.

Novel Seating Arrangement

The place changing and contact making was the result of a carefully studied and completely worked out plan in charge of a seating committee and of which Chairman George W. Ward, who heads the Trades Relations Committee of the Philadelphia Paper Trade Association, was in charge. Although the number actually attending the banquet exceeded early expectations to such an extent that it was necessary to place additional tables in the gallery overlooking the banquet room, usually reserved for spectators, a plan was worked out for the appointment of captains to preside at the several tables. Originally, fifty-four paper salesmen, printers, stationers, box-makers, and others were selected, but these had to be supplemented at the last minute. However, all had been drilled during the course of meetings held earlier in the week and therefore each captain had made himself personally acquainted with the eight fellows who sat at his table and the twenty-seven others who sat at the three adjoining tables, so that he was enabled to introduce each to all every time the guests changed seats.

It was through the special intercession of Chairman Ward that use of the Manufacturers' Club was secured, who took such a deep personal interest in the affair that he gave over several afternoons and almost the entire day of Wednesday to the working out of details, placing his automobile at the disposal of the other banquet officials. Co-operating with Mr. Ward were William Sharpless, chairman of the Trades Relations Committee of the Typothetæ and who gave particular attention to the menus and S. Clayton Wicks of the Biddle-Paret Press who was in charge of the publicity.

Address of Welcome by President Innes

When the guests gathered each was presented with a heart-shaped emblem on which his name was inscribed so that there was no embarrassment through lapse of memory when business friend greeted business friend. After the banquet, President William T. Innes of the Typothetæ as toastmaster in welcoming the guests said that on no previous occasion in trade annals and not even at national conventions had there been so large and so representative a number of the distributors, the converters and the consumers of paper and other factors in the Graphic Art been gathered together as on this occasion. Observation was made by some that while at preceding functions held by the Typothetæ there never had been present more than 100 to 200 guests, the co-operation of the Paper Trade Association had resulted in the record breaking attendance at the Manufacturers' Club. Toastmaster Innes expressed the thought that the Typothetæ of Philadelphia and the parent organization, the United Typothetæ of America had been instrumental in benefiting not only the printing trade, but as well the paper and other allied lines by raising the credit standard of the printing industry from 70th place among all industries which it held a decade or more ago to 30th place which it now enjoyed. He observed that development of cordial relations and of a co-operative nature between paper distributors and paper converters were equally beneficial to paper consumers and he suggested that the success of the evening should be taken as a precedent for at least an annual gathering of all in the industry in Philadelphia and he hoped in other cities as well. He also throughout the suggestion that Thursday, March 1, be set aside for the interchange of visits between all bound together through mutuality of interest in the graphic arts.

Chairman Ward's Address

Welcome then was expressed by Mr. Ward, who in his address said:

"Officially I come before you as the representative of the Philadelphia Paper Trade Association to express to you, the guests and friends of the association, our deepest appreciation of your presence and I express the hope that the night's meeting will mark an epoch in the history of Graphic Arts in and around Philadelphia. I hope that this meeting will be a co-operative affair in which printers, the engravers, paper merchants and all those associated in kindred lines have come together in a spirit of friendship. I hope that this may be taken as an indication that the spirit of co-operation and friendship will be carried out of this room by each and every one of us to continue through the days and weeks and months that follow in all our business relationships.

"I feel that I am connected with an industry—one of the oldest, largest and most important in the world. As paper men our interests are so bound up with the printers that his success is our success, his loss is our loss, his problems our problem. Virtually we are partners and like all good partners we should be willing to give and take and help each other whenever possible. This is a condition that has been gradually growing among us, but it has not developed to the extent that it should, not to the extent that I am sure it will. That we are here tonight in the spirit of good fellowship is an indication that this growth is bound to come.

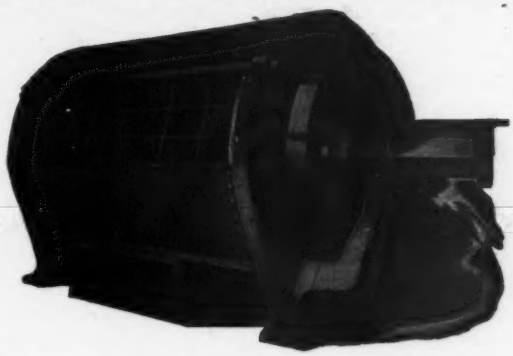
"Quite naturally as a member of the relationship committee of the Paper Trade Association, I have particularly noticed the gradual welding of these cordial relations and I have rejoiced in them. Let me take the motto that the committee saw fit to use in connection with the announcement of this dinner—'All for each and each for all.' Let me urge that we tie this thought closely to our relationships with each other; for we get out of this life just about

(*Continued on page* 38)

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low Power and Upkeep Expense



Delivers Rejections Free from Good Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**

SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

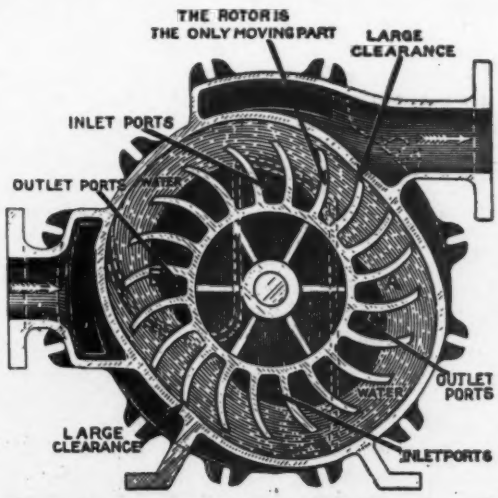
THE HYTOR VACUUM PUMP

FOR FLAT BOX SERVICE

Vacuum Produced Absolutely Without Pulsation

No Vibration

Saves Wires



Only One Moving Part

No Rods, Pistons, Crank Shafts Loose Moving Parts and No Gears

No Expert Attendance

Western Representative
T. H. SAVERY, Jr.
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THE NASH ENGINEERING CO.
WILSON POINT ROAD
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New England Representative
G. H. GLEASON
185 Devonshire Street
Boston, Mass.

Obituary

William J. Demarest

William J. Demarest, for many years in charge of the Parsons Trading Company's Cuban, Mexican and Porto Rican departments, died on February 8 after a brief illness. He is survived by his wife and two sons.

Outside of business he was prominent in the work and counsels of his church which honored him with the highest offices open to a layman. He was a Mason, and active in many civic causes. He is mourned by a host of friends.

GRAPHIC ARTS DINNER IS SUCCESS

(*Continued from page 36*)

what we put into it and as each one of us treats our clients, our customers, our supply house, our mill—in just that way may we rightfully expect to be treated by them. We have the great advantage of being able to set this standard and if the standard is a fair one and a square one—'All for each, each for all'—there is no limit to the cordial relationship, co-operative spirit, and real happiness and profit that will result to each and every one of us."

Rev. Dr. Norwood's Message

Reverend Dr. Robert Norwood, rector of St. Paul's Memorial Episcopal Church, Overbrook, made an eloquent and helpful address. He emphasized the fact that all present were engaged in the important work of furthering and forwarding communication and this he declared to be the most momentous and most important requirement of the world at the present critical time. He impressed on all the importance of being in love with their work, arguing that the surest sign of approaching old age and mental infirmity was the cooling of ardor for the day's work in hand. National President, J. Linton Engle of the U. T. A., the fourth Philadelphian to be called to the head of this great organization, his predecessors having been J. R. McFetridge, Edward Stern and E. Lawrence Fell spoke at length on the accomplishments of the printer's organization. He developed the thought that there had been three distinct phases in its history, the first being the formative, distinguished by its membership drive and the adoption of A Code of Ethics; the second, beginning in October, 1909, made notable by the appointment of a cost commission and the adoption of a standard cost finding system which he said was the keystone of an arch based on good fellowship; the third starting in 1917 and characterized by the extension of membership, the addition of many activities and the adoption of what was known as the three-year plan, but which he said should really be called the Non-Stock Plan and which had resulted in a growth of membership from 1,600 to 5,000 and an increase in resources from $8,500 a year to $200,000. The fourth period he said was now being entered upon and already had been signalized by the meeting recently in New York and the appointment of a committee on industrial engineering. A matter of vital interest to the paper distributors was found in Mr. Engel's presentation of statistics which, summarized, showed that of all the printing establishments in the United States 22 per cent were one man shops; 50 per cent employed from one to five men; 20 per cent from six to twenty men; 6 per cent from 21 to 50 men, 1½ per cent from 51 to 100 men and 1 per cent over 100.

Optimism of E. J. Cattell

Of course everyone waited for the final address of the evening, that of Edward James Cattell, who though frequently a speaker before the Paper Trade Association, the Stationers' Association, the Stock Dealers' Association and other organizations always has a new method to present in a new way. He convulsed the audience with clever stories, always, however, emphasizing a point and bringing home a great thought and then with ease alternated to real pathos. The central theme of his address was the immense opportunity lying before all in the United States, the richest nation in the world and he believed the most really frugal and happy.

Seated at the main table in addition to the speakers were E. Lawrence Fell, Robert McP. Milans, Edward S. Paret, Arthur B. Sherrill, president of the Paper Trade Association; Edward Stern, Julius S. Weyl and S. Clayton Wicks.

To Tax Logs From British Columbia

WASHINGTON, D. C., February 20, 1923.—The Customs Service has instructed collectors to assess duty on certain logs cut from Crown or private lands in the Province of British Columbia that are subject to the payment of a certain timber tax under Paragraph 401 of the Tariff Act of 1922. In connection with this countervailing duty on logs from British Columbia, the Customs Service in its announcement to collectors says:

"The Secretary of State has caused to be forwarded to the Department a copy of the 'Forest Act' of the Province of British Columbia (consolidated for convenience only, May 6, 1921), Section 58, subsection 2, of which reads as follows:

"(2) There shall be due and payable to His Majesty, his heirs and successors, a tax upon all timber cut within the Province, save and except that upon which a royalty is reserved by this section or any amendment thereof, or that upon which any royalty or tax is payable to the Government of the Dominion of Canada, which tax shall be as follows:

" 'Two dollars per thousand feet, board measure, on No. 1 grade; one dollar and fifty cents per thousand feet, board measure, on No. 2 grade; and one dollar per thousand feet, board measure, on No. 3 grade; Provided that a rebate of all the tax over and above one cent per thousand feet, board measure, shall be allowed when the timber upon which it is due or payable is manufactured or used in the Province, 1914, c. 32, s. 15.'

"The Department is of the opinion that this provision of the statutes of the Province of British Columbia constitutes a restriction of exportation within the meaning of the proviso of paragraph 401 of the Tariff Act of 1922. Collectors are, therefore, hereby instructed to assess duty under that paragraph upon all logs of the varieties specified therein that are subject to the timber tax, provided for in the statute quoted herein, whether the logs are cut from crown or private lands.

"Collectors shall require the production of such evidence as shall satisfy them whether logs from British Columbia are subject to the timber tax in question, and shall submit to the Department for instructions any case in which they may be in doubt."

Miami Valley Traffic Club Meets

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, February 19, 1923.—Dr. John Wesley Hill, widely known in industrial circles, addressed 250 members of the Miami Valley Traffic Club and their friends at the Miami Hotel dinner last week.

Mr. Hill spoke vigorously on American conditions and pointed the way to freedom of action among manufacturers and business men. He declared that there should be no interference with business by Government, particularly in the transportation end.

The meeting was attended by a large number of paper manufacturers, purchasing agents and traffic managers of paper and allied industries.

The Hamilton and Middletown paper contingents were the largest of any visiting delegation. A paper man presided over the meeting and as he remarked, it reminded him of a gathering almost exclusively of Miami Valley paper tradesmen.

The traffic club has accomplished considerably for its organization and holds regular meetings in an effort to solve the many trying problems which are continually bobbing up in their business

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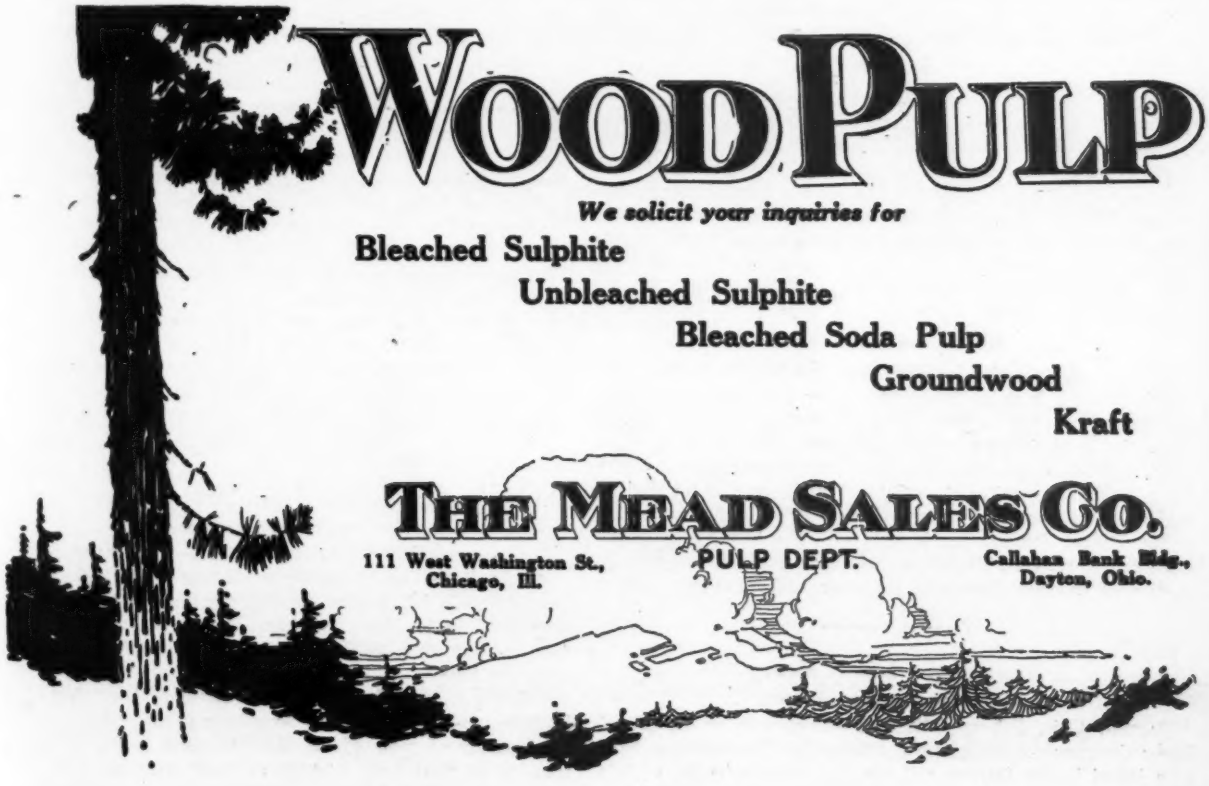

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New York Trade Jottings

New York City paper salesmen held an interesting luncheon at the City Club, Tuesday noon of this week.

* * *

The Swedish Chamber of Commerce of the U. S. A., located in the Produce Exchange Building, New York, has recently issued an attractive pamphlet of interest to paper and pulp importers on "The Port and Free Harbour of Gothenburg."

* * *

Motion pictures on forestry and lumbering in Sweden will be exhibited under the direction of Dr. Harry von Eckermann before the American Society of Mechanical Engineers at the Engineering Societies Building, West 39th street, New York, Friday afternoon of this week at 5:00 o'clock.

* * *

Dr. Hugh P. Baker, executive-secretary of the American Paper and Pulp Association, is now conducting a very interesting series of meetings with paper manufacturers in the Middle West. According to Warren B. Bullock, director of the information service of the Association, Dr. Baker delivered three addresses on one day last week in Cincinnati.

* * *

W. E. Shuttleworth & Co., formerly of 248-50 Greenwich street, New York, have recently purchased all of the machinery and assets of the Kolb Carton Company, formerly of Norwich, Conn., and have removed the entire plant to the old Shuttleworth, Keiller & Co. building, 474-6-8 West Broadway, through to 146-50 Thompson street. Their plant is now in full operation and they are ready to take orders for manufacturing folding boxes of every description. Their new telephone numbers are Spring 6276, 6277 and 6278. They also carry a large stock of wrapping paper, paper bags, twines, package handles, etc.

* * *

Stone Brothers and Victor Galaup Company, Inc., of 153-155 Spring street, New York, importers and exporters of paper manufacturers' supplies, make the following announcement: The Etablissement Victor Galaup, Paris, France, have just taken over for their own use and also for that of the Stone Brothers and Victor Galaup Company, the business formerly conducted by the Etablissement Cuseneir and Verdier Dufour, located at 251 Rue de Crimee, Paris, France, which will now give them a warehouse space of approximately 400,000 square feet. These plants are the most fully and completely equipped rag warehouses in Europe.

* * *

Robert L. Stevens, Jr., is still in the paper business in the Woolworth Building, here in New York, selling more paper and paper specialties than ever before, and the Stevens Paper Company, of which he is president, assures its customers that it is still in a good position to take care of their various requirements. In a letter to the PAPER TRADE JOURNAL Mr. Stevens states that he noticed in the issue of February 15, page 28, an item stating that a Mr. Robert Stevens, Jr., is now with the Inland Paperboard Corporation, at Versailles, Conn., and adds, that he "never knew there were so many Stevens in the paper industry until recently."

News of the Miami Valley

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, February 19, 1923.—Employees of the Miami Paper Company are organizing a social club. The employees have been joined by the foreman and the idea is to invite the officials at times to participate in the activities of the club though it is being formed primarily for the workers. George Lawrence is the promoter.

The club plans to meet the first Wednesday of each month not only in a social way but other meetings will be held looking toward the welfare of all members.

This makes the third organization for foremen and employees organized in West Carrollton mills and it promises to become a valuable asset to the community.

A Community House is conducted in West Carrollton where all residents may enjoy themselves. Reading rooms, club rooms, billiard parlor, barber shop, ladies' rooms and everything conducing to the comfort of a community have been provided with a competent manager in charge.

It has been generally understood that the manager is paid by the Miami Paper Company while other expenses are met by the paper and envelope and parchment plants of the town.

The marriage of Miss Doreen Wilson of Sault Ste. Marie, Can., to Humphrey Auden of this city, took place the past week at the home of the bride's parents, Mr. and Mrs. P. D. Wilson.

Miss Wilson was the guest of Mr. and Mrs. Harry Conway last Summer when she made many friends here who will welcome her when she arrives in Dayton to make her home.

Mr. Auden is associated with the G. H. Mead Company, a large paper concern, and is widely known in the trade. He held a captain's commission with the British Army during the war.

Wilson W. Galloway, general manager of the Hagar Straw Board and Paper Company, Cedarville, and H. G. Funsett, superintendent of the plant, spent part of last week in Chicago where Mr. Galloway attended the monthly meeting of the Strawboard Associations and Mr. Funsett attended the meeting of the Western Board Division of the American Paper and Pulp Mill Superintendents' Association.

Mr. Funsett went to Deerfield, Wis., his home before returning to Cedarville, taking advantage of his visit in Chicago to extend his trip. Mr. Galloway joined former associates at Denison College for a reunion.

Frank J. Dunifer, assistant general manager of the Miami Paper Company, West Carrollton, has gone to the Pacific Coast on a business trip. Mr. Dunifer has made this trip several times during the past year, visiting Los Angeles, San Francisco and other Pacific cities in the interest of business. On one of these trips he was called home on account of the death of Mrs. Dunifer's father.

Pupils of the seventh and eighth grades of Westwood school were taken on an inspection tour of the Peerless Paper Company's plant, Idylwild avenue and Webster street, Thursday afternoon. They were accompanied by their teachers and members of the Parents'-Teachers' Association.

Deeper interest is being manifested in vocational training from year to year, which is considered a good sign of the times. Paper makers encourage inspection visits, particularly where the youth of the vicinity gain ideas which may prove the turning point in their lives in the matter of selecting a lifetime vocation.

St. Regis to Retire Funded Debt

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., February 19, 1923.—The total funded debt of the St. Regis Paper Company, amounting to $2,210,000, will have been retired in full, leaving the company property free from mortgage, on June 1. Notice has just been sent out to the holders of bonds amounting to $450,000 to the effect that the bonds will be called on June 1.

It is the regular 60 days' notice required by law. Already $1,760,000 worth of these bonds have been called and retired. The sale recently of some of the physical assets to the Power Corporation of New York brought in funds with which the major portion of the funded debt was retired.

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Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 21, 1923.—The purchasing officer of the Government Printing Office has received the following bids:

37,000 pounds best quality binders' board; various sizes: Ingalls & Co., at $92.00 per ton; R. P. Andrews Paper Company, $106.60; Kerr Paper Mills Company, $93.00; Philip Rudolph & Son, Inc., $90.00.

The purchasing officer of the Government Printing Office has received the following paper bids:

10,000 pounds 22½ x 28½—75 Blue and salmon calendered tag board, in 24 inch rolls: R. P. Andrews Paper Company, at $.0888 per pound.

10,000 fiber containers, 17¼ x 11⅛ x 5⅝ inch: Ohio Boxboard Company, at $103.90 per M; Consolidated Paper Company, $102.80; A. Geo. Schulz Co., $129.50; Hummel & Downing Company, $123.00.

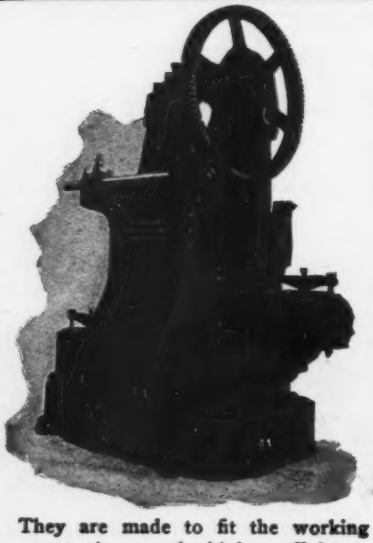
100,000 White linen shipping tags, No. 4, 4 5/16 x 2⅜ inch: Gimbel Brothers, at $2.97 per M; Dennison Manufacturing Company, $2.55; R. P. Andrews Paper Company, $2.80; The Denney Tag Co., Inc., $2.74; Campbell Paper Box Company, $2.46; C. J. Vanella & Co., $3.50; The Whitaker Paper Company, $2.44; International Tag Company, $2.55.

Bids will be opened at the printing office on February 26 for 4,500 pounds 24 x 36—86 pounds oiled manila tympan paper.

The purchasing office of the Government Printing Office has received the following paper bids:

500 sheets 22 x 28—Proving paper, coated on one-side: Louis Dejonge & Co., $31.00; R. P. Andrews Paper Company, $35.00, The Whitaker Paper Company, $27.50; Star Plate Corporation, $27.00. pany, at $75.00 per M; Consolidated Paper Company, $59.50.

2,000 11¼ x 6⅞ x 5⅝—Fiber containers: A. Geo. Schulz Company, at $75.00 per M.; Consolidated Paper Company, $59.50.



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The purchasing officer of the Government Printing Office will open bids on February 23 for the following:

1,000,000 pounds 22½ x 28½—104 U. S. postal card cream bristol board.

On February 26 bids will be opened at the printing office for 42,635 pounds (645 reams) of various sizes white ledger paper.

The Paper Manufacturers Company has been awarded the contract for furnishing the Government Printing Office with 39,050 pounds (400 reams) of various sizes sulphite Manila paper at $.063, bids for which were opened on February 5.

The R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 19,200 pounds (400 reams) of 20 x 25—48 dawn, khaki, moss green and sage rough cover paper at $.0873 per pound and the Broderick Paper Company will furnish 20,800 pounds (200 reams) of 26½ x 41—104 India tint coated cover paper at $.0998 per pound. Bids for these items were opened on February 9.

The B. F. Bond Paper Company has been awarded the contract for furnishing the Government Printing Office with 1,000,000 No. 8 manila shipping tags at $1.29 per thousand. The other bids received were as follows: Denney Tag Company, at $1.64 per 1,000; International Tag Company, at $2.04; American Tag Company, at $1.70; Dennison Manufacturing Company, at $2.60, $1.93, $1.53, $1.51; and $1.32; Campbell Paper Box Company, at $2.07, Knickerbocker Supply Company, $1.68, and Reyburn Manufacturing Company, at $1.57, and $1.86.

Salesmen's Luncheons in Ohio and New York

Luncheons for the various regional groups of the Salesmen's Association of the Paper Industry for Middletown, Ohio, New York and Boston, are a February feature of the activities of the salesmen. While the New York and Boston luncheons were part of the plan for monthly meetings of the paper salesmen of those regions, the Ohio meeting was planned for February 14 as a special event, because of the visit to Ohio of Dr. Hugh P. Baker, who is secretary of the national salesmen's organization, as well as executive secretary of the American Paper and Pulp Association, New York City.

The New England division in arranging for a series of informal luncheons, scheduled the first for Thursday, February 15, at the Boston City Club. It is planned to have these meetings made a monthly event for the New England district, just as has been done in the case of Chicago and New York, where the meetings are steadily gaining in attendance and growing in importance.

The New York division's February luncheon was set for Tuesday, February 20, and like the Boston luncheon was a free and informal discussion of general conditions in the industry as well as of means for improving the work of the association.

Meanwhile the Chicago luncheons are now to be considered fixed events, but the Chicago salesmen are always glad to have their eastern confrères to plan their visits to the West that they can attend the luncheons held each Monday at 12:30 in the old Colony Club of the La Salle Hotel.

Export Demand Good for German Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 21, 1923.—The export demand for paper in Germany is reported to be good, but domestic sales are slack, according to a cable dated February 9 from Commercial Attache Herring at Berlin. As a result it has been necessary to put some of the mills on part time operation. German purchasers have been quoted a price of 1,170 marks per kilo on printing paper effective February 1.

The price that was announced for January 1 was only 560 marks per kilo.

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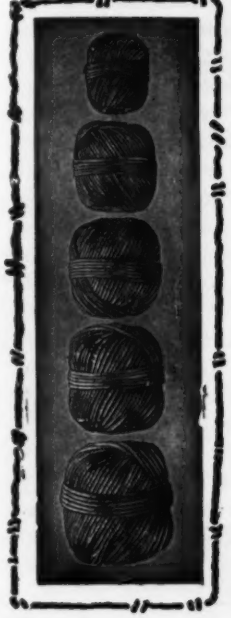

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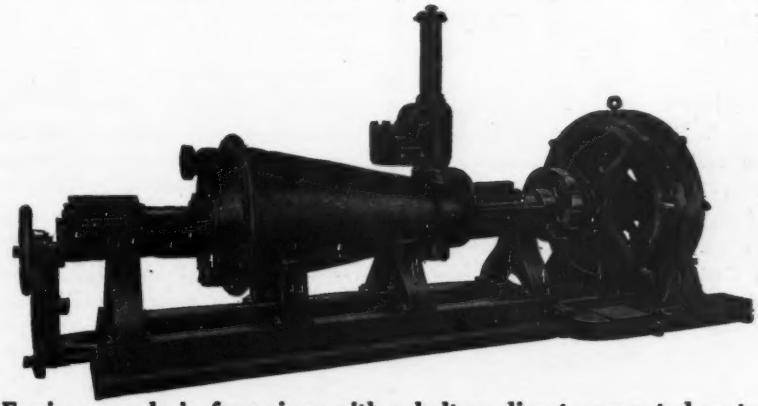

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Editorial

Vol. LXXVI New York, February 22, 1923 No. 8
HENRY J. BERGER, Editor

EFFECTS OF PULP STRIKE IN SWEDEN

More than a month having passed since the beginning of the strike among pulp and paper mill workers of Sweden, the first effects of the curtailment in production of the second largest pulp producing nation in the world are beginning to be felt in the United States.

When representatives of the workmen last appeared before the Governmental Mediation Commission they declared they were prepared to consider an agreement in the saw-mill and wood pulp industries only upon the condition that the conflict between the employers and the lumbermen would be solved simultaneously. Coincident with the refusal of the Employer's Association of Sweden to discuss the strike of forest laborers, a general lockout was declared extending to all paper and pulp mills. With relations decisively severed and no arbitration in sight, the two parties to the strike left the conference about 30 per cent apart in their views as to adequate compensation for workmen.

"The prospects are," says the *World's Paper Trade Review*, of London, Eng., "that a severe struggle will ensue judging by the temper displayed by both sides. We learn from a reliable source in Sweden that the fight is likely to last for at least two months, although it is possible that economic facts may force the hands of the parties to the dispute. In this connection it is pointed out that labor troubles in the pulp industry of Sweden have seldom been of long duration."

This view has generally been adopted by importers of the United States, and while the Swedish strike issue has been forced into the background by such factors of immediate domestic interest as the widespread mill demand and the increase of pulp storage and transit rates by railroads of the port of Boston, the tieup in the Scandinavian Peninsula has remained, nevertheless, as a threat which must some day have a very important bearing on the pulp markets of America. At the very inception of the strike leading importers of New York predicted, in interviews with a representative of the PAPER TRADE JOURNAL, that the lock-out would have the effect of making this spring's market for spot pulp very strong. This was accounted for by the fact that the last open water shipments which arrived in this country were very small in comparison to the shipments last year, due to the fact that the Swedish manufacturers were cleaned out of their available supplies of pulp. This last condition, it was said, resulted from the fact that the American market alone took twice as much pulp as previously, while the demand from other markets, England, for example, continued to be steady. On top of this, Swedish manufacturers anticipate a booming demand from continental Europe for the balance of the current year.

In this regard, the *World's Paper Trade Review* continues, "The position of the pulp market is accentuated by the fact that United States consumers are placing orders on this side for chemical as well as mechanical pulp. And with United Kingdom and Continental papermakers anxious as to their future requirements, the state of the pulp business can readily be imagined. With Swedish plants idle, the amount of pulp available will be seriously restricted. Moreover, Finnish mills are understood to be sold well ahead. Hence for the time being European sources are much curtailed. The effect of the strike will, therefore, be to stiffen prices of paper and enhance values, which were already too low in comparison with the cost of production."

In the United States, as in England, the pulp market has acquired a considerable degree of firmness during the past month. Strong and easy bleaching sulphite are both higher and a scarcity of mechanical pulp now prevails on both sides of the water. Pulp is fairly plentiful now at prices which compare favorably with those of waste paper. The Swedish pulp which is now entering domestic consumption at such a rapid rate was, in the main, produced by the Southern Swedish mills, representing only one-fifth of the nation's output, because they were practically the only ones with ocean shipping facilities when the strike began.

If the strike continues another sixty days, as this English paper predicts, there will be no opportunity for the accumulation of stocks at the remaining eighty per cent of Sweden's mills for shipment when navigation opens. The ice-bound ports of the North Baltic will have no pulp to ship. The country ordinarily producing more than one-half of all chemical pulp and one-quarter of all mechanical pulp in International commerce will be out of the running.

EXPORT TRADE IN PAPER

The export demand for paper shows no great signs of improvement. The export figures for December, which have just been issued by the Department of Commerce at Washington, D. C, amounted only to $2,270,196. This is a somewhat better record than the figures for November, which were only $2,012,814, and considerably better than the record for December, 1921, when the figures were only $1,595,429, but continues decidedly below the figures of a few years ago. The exports of all varieties of paper for the twelve months ending with December amounted to $24,152,567, as compared with $29,029,673 for the same period in 1921. While this shows a considerable decrease in the aggregate for the year just closed, the situation is more encouraging than would appear to be the case, as the figures for the latter months of the year have been exceeding those for the same months in 1921.

A fairly good increase was shown especially in news print paper, the figures for December amounting to $196,834, as compared with $140,258 for November, and $141,700 for December, 1921. The exports of news print for the twelve months ending with December were valued at $2,352,587, as compared with only $2,160,339 for the same period in 1921.

The exports of wrapping paper also showed a fairly good increase, the figures for December amounting to $215,730, as compared with $145,480 for November and $152,863 for December, 1921. The exports of wrapping paper for the twelve months ending with December were valued at $2,165,829, as compared with $2,293,892 for the same period in 1921.

The exports of paper board and straw board were valued at $228,708 for December, as compared with $171,527 for November and $163,444 for December, 1921. The exports of paper board and straw

board for the twelve months ending with December were valued at $2,114,661, as compared with $2,323,949 for the same period in 1921.

The exports of cover paper for December amounted to $15,383, as compared with $18,850 for November, and for the twelve months' period ending with December were valued at $225,286.

The exports of grease proof paper for December were valued at $11,086, as compared with $11,674 for November, and for the twelve months' period ending with December were valued at $143,495.

The exports of writing paper, except in papeteries, for December were $91,741, as compared with $84,829 for November, and for the twelve months' period ending with December were valued at $1,153,089.

The exports of toilet paper for December were $43,876, as compared with $46,955 for November, and for the twelve months ending with December were valued at $536,712.

The exports of paper towels and napkins for December were valued at $11,113, as compared with $13,412 for November, and for the twelve months ending with December were valued at $147,848.

The exports of paper bags for December amounted to $71,522, as compared with $83,276 for November and $70,890 for December, 1921. The exports of paper bags for the twelve months ending with December were valued at $1,054,866, as compared with $846,909 for the same period in 1921.

The exports of envelopes for December were valued at $39,170, as compared with $46,239 for November, and for the twelve months ending with December they were valued at $502,726.

Owing to the complication caused by the new tariff law, the import figures on paper and pulp have not been available since September. It is expected, however, that these will be published in the near future.

Tariff Commission Reports on Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 21, 1923.—The United States Tariff Commission in its annual report has the following to say regarding the revision of the paper schedule in the present tariff law:

A simplification of the classification of printing paper by the employment of a utilization rather than a value basis is an outstanding feature of the schedule applying to paper and books in the tariff act of 1922. Under the act of 1920 printing papers were classified for tariff purposes on the basis of value of not less than 5 cents per pound and not more than 8 cents per pound. The purpose of the higher classification was to distinguish book paper from news print, but owing to unusual conditions of trade news print prices advanced materially and a new basis for tariff purposes became necessary. After careful consideration it was recommended that the commercial term "standard news print paper" be adopted, and that the remaining imports of paper under the former schedule be known as "printing paper." The recommendation was supported, and under the act of 1922 standard news print paper is admitted free of duty while printing paper, which is in reality a grade of book paper, is subject to a duty of one-fourth cent per pound and 10 per cent ad valorem. The great bulk of printing paper which is used by the newspapers of the country thus enters free of duty.

A number of minor changes were made in the schedule for the purpose of clarifying the tariff act and its administration. For instance, all varieties of paper board no further advanced than the original manufacture on the paper machine are grouped under paragraph 1302, thus doing away with the segregation of cardboard, cylinder machine bristol board, leather board, and box board and pulpboard. By defining the thickness of paper imported under this paragraph the classification is clearly established. Further illustration of the clarifying process accomplished through minor changes in wording or grouping is the paragraph applying to envelopes. Under the act of 1922 envelopes instead of bearing a uniform rate of duty are assessed according to the paper from which they are manufactured.

Among the changes in the paper and book schedule made by the Congress are the inclusion of two retaliatory clauses directly affecting printing paper and wallboard, respectively, and indirectly affecting wood pulp and pulpwood. The clause forming part of the printing paper paragraph provides that where a country or political subdivision forbids or restricts the exportation of printing paper, wood pulp, or pulpboard the President may negotiate for the free movement of these commodities, and if no change is forthcoming there shall be imposed an additional duty of 10 per cent and an amount equal to the highest export charge upon an equal quantity of printing paper or its equivalent in wood pulp or pulpwood.

The second retaliatory clause in the paper and book schedule appears in paragraph 1302, relating to paper board, wallboard, and pulpwood.

The paragraph provides that if any country imposes a duty on any article specified in the paragraph when imported from the United States in excess of the duty provided by the United States then the duty imposed shall be equaled.

Wilcox-Mosher-Leffholm Co. Formed

[FROM OUR REGULAR CORRESPONDENT.]

MINNEAPOLIS, Minn., February 20, 1923.—The Wilcox-Mosher-Leffholm Company has incorporated to carry on a wholesale paper business in Minneapolis. The incorporators are: A. N. Wilcox, a director and stockholder of The John Leslie Paper Company, who has been identified with that company as salesman for twenty-eight years; J. C. Mosher, formerly with the Whiting-Plover Paper Company, Stevens Point, Wis., as assistant manager and previous to that with the Western Paper Company and Newspaper Union at Omaha, Neb., and for the past eight years buyer and manager of the Mill Department at the John Leslie Paper Company; Paul S. Leffholm, stockholder of the Leslie Paper Company and for the past fifteen years salesman in the Fine Paper Department and recently manager of the Announcement Department of that company.

The new concern is now negotiating for the location of its warehouse which will soon be announced to the trade.

The new company has several mill connections now assured in different standard lines and expects to handle a general line of wholesale paper, specializing on fine papers.

Buck, Kiaer & Co. Open Wood Pulp Sales Offices

Buck, Kiaer & Co., Inc., have opened sales offices at 342 Madison avenue, New York, for Scandinavian and middle European wood pulps. The officers of the company are O. E. Kiaer, president; L. J. Buck, vice-president and treasurer; G. W. Spencer, secretary. The board of directors consists of prominent Norwegians and Americans.

Mr. Kiaer's family have been in the wood pulp business in Norway for nearly 100 years and the family concern has done as much for the development of the forestry, saw mill and pulp industries as any other Scandinavian firm.

The members of the firm expect to call upon the wood pulp consumers in the United States in the near future and in order to be in position to render the best service to their customers they have associated with them Hjalmar A. Clemetsen, who has been connected with various paper mills in different capacities.

All the members of the firm are more or less known throughout the paper industry.

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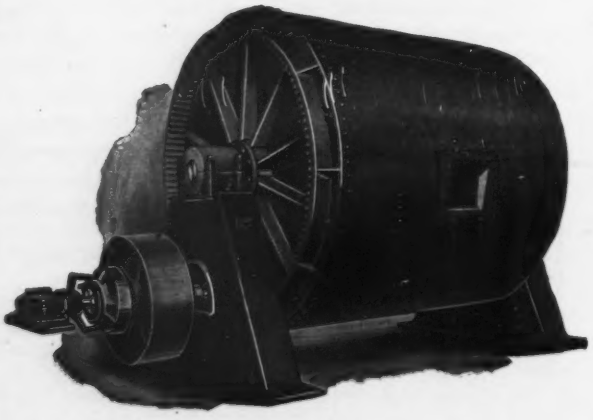

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.
Conducted by W.G.MacNAUGHTON, Secretary

FACTORS INFLUENCING THE PROPERTIES OF WOOD CELLULOSE AS ISOLATED BY THE CHLORINATION METHOD

By Mark W. Bray[1] and T. M. Andrews[2]

A study of the factors influencing the character of wood cellulose as determined by the percentage of alpha-, beta-, and gamma-cellulose[3] was undertaken because these values were not uniform in samples of cellulose from pulps which were difficult to chlorinate. Neither did these values lie in proper relation to each other in a series of pulps in which all cooking conditions except time were kept constant. In this series it was found that the alpha-cellulose in the cellulose obtained by the chlorination method,[4] increased with time of cooking, while the per cent of cellulose, calculated on the oven-dry weight of the wood, actually decreased. In fact, there was more alpha-cellulose in the Cross and Bevan cellulose[4] (calculated on the oven-dry weight of the wood) in the well-cooked pulps than in that of the wood from which they were derived. This pointed to errors in the determination of alpha-, beta-, and gamma-cellulose.

From this and other data it was evident that pulp which had been cooked to completion yielded a product that was more easily chlorinated than wood or partly-cooked pulps. In some cases two samples of the same pulp chlorinated at the same time, and in the same apparatus did not give good check determinations for alpha-, beta-, and gamma-cellulose. These facts would lead one to believe that time of chlorination and treatment of samples influenced the estimation of the percentage of alkali-resistant and non-resistant cellulose occurring in the Cross and Bevan cellulose. It was thought, therefore, that a study of the conditions, which tend to influence the amounts of alpha-, beta-, and gamma-cellulose in cellulose from woods and pulps would give data which could be used to establish a method whereby consistent results might be obtained. From these data it was also hoped to establish the relation of alpha-, beta-, and gamma-cellulose to other chemical constants, as well as to the character of the pulps resulting from changes in the cooking conditions and processes.

The following factors which appeared to influence the per cent of alpha-, beta-, and gamma-cellulose were studied:

1. The effect of time of chlorination on cellulose obtained by the Cross and Bevan method.

2. Action of 17.5 per cent NaOH in varying amounts and for varying lengths of time on cellulose.

3. Since over-chlorination of pulps gave increased percentages of non-resistant cellulose, it was thought advisable to compare the alpha-, beta-, and gamma-cellulose content of chlorinated pulp with that of pulps and woods which had not been chlorinated. In other words, the alpha-, beta-, and gamma-cellulose determination was made directly on samples of wood and of pulp and compared with the values found in the cellulose.

4. In order to establish this relation it was also necessary to study the action of 17.5 per cent NaOH solution on lignin derived from this spruce wood by the method of Ost and Wilkening.[5]

5. In connection with this study, the alpha-, beta-, and gamma-cellulose content was determined directly on sulphite pulp, made from decayed wood, and also on the cellulose derived from it. This procedure would show whether the non-resistant cellulose was a result of chlorination or of the action of the organisms of decay.[6]

6. Copper numbers were also made on the cellulose from pulps that had been chlorinated for varying lengths of time.

Discussion

When the percentage of cellulose in woods and pulps is estimated by the modification of the chlorination method of Cross and Bevan, reported by A. W. Schorger[7] in "The Chemistry of Wood," the yield of cellulose is practically constant, although the nature of the product varies considerably with the length of time of treatment

[1]Chemist in Forest Products, Forest Products Laboratory, Madison, Wis.

[2]Associate Chemist in Forest Products, Forest Products Laboratory, Madison, Wis.

[3]Cross and Bevan, "Researches on cellulose," 1905-1910 III, 23; "Paper Making." 1916, 97; Schwalbe. "Chemie der Cellulose" (1911), 637; M. W. Bray and T. M. Andrews, "An improved method for the detemination of alpha, beta and gamma cellulose." Ref. paper presented at Pittsburgh meeting of the cellulose section of the American Chem. Soc.

[4]Cellulose was determined by a modification of the Cross and Bevan method. This involved alternate treatment with chlorine gas and a 2 per cent solution of sodium sulphite to a point where no color resulted with the sulphite solution after treatment with chlorine.—See A. W. Schorger, J. Ind. & Eng. Chem. 9, 556 (1917).

[5]Ost and Wilkening (Cross and Bevan Researches on Cellulose), 1905-1910, III, 1-39.

[6]Chemical changes involved in decay of wood and wood pulp.—M. W. Bray and J. A. Staidl, J. of Am. Chem. Soc., 14, No. 1, 35 (1922).

[7]A. W. Schorger, J. Ind. and Eng. Chem., 9, 556 (1917). Also 14, No. 8, 728 (1922).

with chlorine gas. The data given in Table No. 1 are the results obtained when two separate twenty-gram samples of sulphite pulp No. 37 were treated alternately with chlorine gas and boiling 2 per cent solutions of sodium sulphite. The periods of chlorination were increased as the experiment progressed. The alpha-cellulose in the first sample decreases from about 85 per cent to 69 per cent with a total of 4 hours of chlorination.

In the second sample the alpha-cellulose decreased from 84 per cent to 55 per cent, with a total of 10½ hours of chlorination.

There is but a slight total increase in gamma-cellulose as a result of extended chlorination; however, the beta-cellulose increases to a very marked degree.

The relation of over-chlorination to copper number 8 of Cross and Bevan cellulose

In the study of over-chlorination of cellulose from spruce sulphite pulp, it was found that a more or less definite relation exits between the percentage of of non-resistant or beta- and gamma-cellulose and the copper number made on the Cross and Bevan cellulose. This relation may be expressed in the simple equation, as follows:

$$\frac{\text{Copper number of cellulose}}{\text{Per cent beta- plus per cent gamma-cellulose}} = K = 0.26$$

or one gram of beta- plus gamma-cellulose will reduce 0.26 grams of copper in Fehling's solution, irrespective of the relative proportion of beta- and gamma-cellulose.

The copper number, therefore, when applied to Cross and Bevan cellulose from spruce wood, may be used as a check on the determination of the stable and less stable cellulose, and also as a measure of over-chlorination. It is also expected through further experimentation to study the application of this value to other woods and to the control of the bleaching of wood pulp; also to use it in studying the mechanism of the bleaching action.

From the constant relation expressed in the above equation, the molar relation of reduced copper to beta- and gamma-cellulose is 1:1.5. Comparing the reducing power of beta- and gamma-cellulose with the reducing power of dextrose as obtained from Allhin's[9] table, it appears that the non-stable celluloses have a reducing power approximately ⅛ that of dextrose. The calculation upon which the above is based is as follows: From Table 1, one gram of cellulose will reduce 0.26 grams of copper in Fehling's solution. To reduce to molar relations: 1/162.1 or 0.00617 mole celluose $= \frac{0.260}{63.5} =$ 0.0040945 mole copper. Therefore, $\frac{0.00617}{0.0040945}$ or 1.507 mole cellulose are equivalent to 1 mole copper reduced.

In the case of dextrose, 0.1346 grams dextrose will reduce 0.260 grams copper, $\frac{0.1346}{180}$ or 0.000748 mole dextrose, $= \frac{0.260}{63.5}$ or 0.0040945 mole copper. Therefore, $\frac{0.000748}{0.004945} = 0.1826$ mole dextrose is equivalent to one mole of copper.

The action of 17.5 per cent NaOH on cellulose for varying lengths of time

Samples of cellulose obtained from pulp No. 2548 were separately treated with 20 cc. of NaOH for one-half hour, and one hour with 25 cc. for one-half hour, and with 50 cc. for one-half hour.

TABLE 1

The changes in cellulose of sulphite pulp No. 37 during over-chlorination and the relation of copper number to the percentage of beta- plus gamma-, cellulose

Time of chlorination	Alpha-cellulose	Beta-cellulose	Gamma-cellulose	Beta-, plus gamma-, Cellulose	Total alpha-, plus beta-, plus gamma-, cellulose	Copper number	Copper number corrected*	Ratio copper number corrected to K beta-, plus gamma-, cellulose	Molar ratio Cu : $C_6H_{10}O_5$
Min.	%	%	%	%					
..	85.0	2.86	10.75	....	....	....	....	....	.....
32	84.7	3.4	10.75	13.9	98.72	3.74	3.36	0.242	1:1.61
92	82.8	2.7	11.55	14.26	97.1	4.12	3.74	0.262	1:1.495
242	69.4	15.0	13.9	28.86	98.5	8.35	7.97	0.276	1:1.42
				Second Run					
32	84.0	0.7	14.1	14.8	98.95	4.00	3.62	0.245	1:1.57
152	81.0	4.5	13.15	17.65	98.65	5.02	4.64	0.263	1:1.49
392	71.9	15.05	11.55	26.6	98.50	7.32	6.94	0.261	1:1.50
632	54.85	27.65	16.0	43.6	98.50	11.92	11.54	0.264	1:1.485
...	.....	.....	....	....	.....	.....	Ave.	0.259	1:1.51

*Blank determinations gave a copper number of 0.38. This value was applied as a correction.

DEXTROSE

Allhin's tables

Mg. dextrose	Mg. Cu.	Molar ratio Cu:dextrose
32.8	64	1:0.181
129.2	250	1:0.1825
180.4	343	1:0.185
134.6	260	1:0.1826
249.3	462	1:0.19

The results obtained did not give wide differences of alpha-, beta-, and gamma-cellulose in the several treatments. Data are given in Table 2.

TABLE 2

The effect of varying the amount of 17.5 per cent NaOH on cellulose in the separation of resistant from non-resistant cellulose.

17.5% NaOH used	Time	Alpha-cellulose	Beta-cellulose	Gamma-cellulose	Beta-plus gamma-, cellulose
cc.	hrs.	%	%	%	%
20	½	77.0	12.4	9.1	21.5
20	1	76.3	14.0	8.5	22.5
25	½	77.0	14.3	8.1	22.4
50	½	76.0	14.3	9.7	24.0

The relative resistance of wood, partly cooked wood, and wood cellulose to the action of 17.5 per cent sodium hydroxide

Experiments were undertaken to determine the relative resistance of wood, partly cooked wood, and wood cellulose to the action of 17.5 per cent sodium hydroxide under conditions similar to those applied in the estimation alpha-, beta-, and gamma-cellulose. In these experiments samples of wood cooked for various intervals of time, and also the cellulose derived from these pulped woods, were analyzed as for alpha-, beta-, and gamma-cellulose by treating the samples with 17.5 per cent sodium hydroxide. In the estimations the volumetric method[10] was used.

In the determination of the 17.5 per cent alkali insoluble material, a portion remained insoluble in 72 per cent sulphuric acid; this was assumed to be lignin. The clear solution was pipetted off for the determination. The results obtained are somewhat high, due to the fact that lignin which had been acted upon by the 17.5 per cent alkali is no longer completely insoluble in 72 per cent sulphuric acid. This is indicated by the following experiment:

One gram of lignin prepared by the 72 per cent sulphuric acid method of Ost and Wilkening[11] from sound spruce wood was treated for one-half hour with 25 cc. of 17.5 per cent sodium hydroxide. The alkali soluble portion was filtered through an alundum crucible. The insoluble portion was washed and treated with 72 per cent sul-

[9]Copper number, J. Am. Chem. Soc., 34 (1912), 422. Schwalbe, "Chemie der cellulose" (1911), 625.

[9]Allhin's table for the determination of dextrose, U. S. Dept. Agric., Bureau of Chem. Bul. 107 (revised), p. 50.

[10]M. W. Bray and T. M. Andrews, loc. cit.

[11]Cross and Bevan, "Researches on Cellulose," 1905-1910, 3, 39.

phuric acid as in the alpha-cellulose determination. The alkaline filtrate was treated as in the determination of beta- and gamma-cellulose. After the treatment with 17.5 per cent alkali, 6.8 per cent of the lignin appeared to dissolve in the 72 per cent sulphuric acid. The alkaline filtrate contained 5.4 per cent of the lignin which was not reprecipitated by acid.

In the case of the wood, partly cooked wood, and the Mitscherlich pulps, the amount of material soluble in 17.5 per cent sodium hydroxide and reprecipitated by acid is practically the same, being 1.7 per cent, 1.7 per cent, 1 per cent, and .04 per cent for samples Nos. 76, 75, 53, and 51, respectively, although the cellulose content decreases progressively from 60.5 per cent to 45.9 per cent.

The loblolly pine soda pulp sample No. 46 cooked four hours at pressure showed a higher percentage of alpha-cellulose determined on the isolated cellulose than that of the wood, sample No. 76, from which the pulp was made, although the per cent of cellulose had dropped from 60.5 per cent in the wood to 44.4 per cent in the pulp. The above calculations were made on the oven-dry basis of the wood.

The large value for 17.5 per cent alkali soluble cellulose are undoubtedly due to over-chlorination in the process of the isolation of celulose, which is unavoidable in the drastic treatment required for the isolation of the cellulose in under-cooked pulps and wood. Lower values for the 17.5 per cent alkali soluble, but reprecipitated by acid portion, may possibly be more nearly the values which would be obtained were it possible to isolate the cellulose without over-chlorination. Further work will be done in an effort to determine this point. The difference in the percentage of material soluble in 17.5 per cent alkali and not reprecitated by acid as determined directly on the sample and on the isolated cellulose, is relatively small in all cases except the wood and partly cooked wood.

TABLE 3

Comparison of the relative resistence of wood, partly cooked wood, and wood cellulose to the action of 17.5 per cent sodium hydroxide

Results calculated on basis of oven-dry wood.

Sample No.	Treatment with 17.5% sodium hydroxide	Cellulose %	17.5% alkali insoluble %	Soluble in alkali repped by acid %	Soluble in alkali not repped by acid %	Kind of material treated
76	Direct on sample.	60.51	67.2	2.8	4.0	Loblolly pine wood not cooked.
			65.8	0.6	7.2	
76	Cellulose	60.51	24.2	22.2	13.25	Loblolly pine wood not cooked.
			26.4	19.4	12.1	
75	Direct on sample.	52.4	51.4	1.7	3.9	Loblolly pine soda pulp steamed one-half hour.
75	Cellulose	52.4	21.3	22.3	8.5	
46	Cellulose	44.4	34.3	5.2	5.4	Loblolly pine soda pulp cooked 4 hrs. at pressure.
53	Direct on sample.	46.7	42.4	1.0	4.8	Mitscherlich spruce sulphite pulp cooked 12½ hours.
53	Cellulose	46.7	39.6	2.60	4.4	
51	Direct on sample.	45.9	41.3	0.4	8.8	Raw Mitscherlich sulphite spruce cooked 9 hours.
51	Cellulose	45.9	28.4	9.7	6.5	
14	Direct on sample.	50.4	46.2	5.8	1.7	Aspen soda pulp cooked 4 hours at pressure.
14	Cellulose	50.4	36.9	10.8	2.6	
2,548	Direct on sample.	42.5	33.0	5.4	3.5	Decayed spruce sulphite pulp — Ritter Kellner.
*2,548	Cellulose	42.5	32.4	6.45	3.65	

*Average of nine determinations.

Over-chlorination also affects this value as is shown in Table 1.

The relative resistance of decayed pulp and the cellulose isolated from it, to the action of 17.5 per cent sodium hydroxide

These experiments were undertaken to show whether the non-resistant cellulose is a result of chlorination or of the action of the organisms of decay. The same procedure given under the paragraph, "The relative resistance of wood, partly cooked wood, and wood cellulose to the action of 17.5 per cent sodium hydroxide," was used in these experiments. The data given Table 3, sample No. 2548, indicate that the action of some organisms of decay is similar to that of chlorination, since there is a considerable amount of non-resistant cellulose present in decayed pulp before chlorination.

Conclusions

1. Over-chlorination of cellulose increases the percentage of non-resistant cellulose at the expense of the resistant portion.
2. The percentage of 17.5 per cent alkali soluble cellulose reprecipitated by acid in sound wood and pulp is very small compared to that which exists after chlorination.
3. The action of some organisms of decay produce the same effect on the character of the cellulose as over-chlorination.
4. There is a definite relation existing between the percentage of non-resistant cellulose from spruce sulphite pulp and the copper number.
5. The reducing power of non-resistant cellulose toward Fehling's solution is approximately ⅛ that of dextrose.

New Members of Technical Association

Since previously reported, the following have been elected members of the Technical Association of the Pulp and Paper Industry:

Amos L. Allen, General Electric Company, Pittsfield, Mass.

Henry C. Avery, Flintkote Company, 342 Madison avenue, New York, N. Y.

John J. Case, Baker Manufacturing Corporation, Saratoga Springs, N. Y.

A. E. Cofrin, Fort Howard Paper Company, Green Bay, Wis.

Edgar R. Comee, Pejepscot Paper Company, Brunswick, Me.

Marius Doye, Bay Sulphite Company, Ltd., Port Alfred, Que.

F. C. Farnsworth, Farnsworth Company, Norristown, Pa.

Paul M. Foster, Terre Haute Paper Company, Terre Haute, Ind.

Agnar B. Hansen, Marinette and Menominee Paper Company, Marinette, Wis.

S. B. Jones, Pejepscot Paper Company, Brunswick, Me.

William W. Lance, George F. Hardy, 309 Broadway, New York, N. Y.

L. C. Leach, Dennison Manufacturing Company, Framingham, Mass.

Roland G. Macdonald, Pejepscot Paper Company, Brunswick, Me.

Milton J. Maguire, Empire Size and Chemical Corporation, Albany, N. Y.

B. T. McBain, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

William G. Mitchell, Price Bros. & Co., Ltd., Kenogami, Que.

Fred W. Motschman, Pejepscot Paper Company, Brunswick, Me.

George H. Spencer, S. K. F. Industries, Inc., 165 Broadway, New York, N. Y.

Robert H. Stevens, Joseph H. Wallace Company, Stamford, Conn.

Maurice C. Walsh, Mellon Institute, Pittsburgh, Pa.

J. M. Ward, Detroit Sulphite Pulp and Paper Company, Detroit, Mich.

Edward R. Whittemore, Pejepscot Paper Company, Brunswick, Me.

A. F. Wilcox, U. S. Rubber Company, 440 West Washington street, Chicago.

J. L. Williamson, J. O. Ross Engineering Corporation, 549 West Washington street, Chicago.

O. G. Winquist, New York and Pennsylvania Company, Johnsonburg, Pa.

J. O. Woodsome, J. O. Woodsome Company, 2651 West Harrison street, Chicago.

T. A. P. P. I. Convention April 9-13

The annual convention of the Technical Association of the Pulp and Paper Industry will be held at the Waldorf-Astoria, New York, April 9-13.

ELECTRICITY IN PULP AND PAPER MILLS

A Reading List—Contribution No. 39

CLARENCE J. WEST COMMITTEE ON ABSTRACTS AND BIBLIOGRAPHY, TAPPI

Probably the first application of electricity in the pulp or paper mill was for illuminating purposes. As a form of power, electricity first became a factor in the industry about 1900. Since then very important developments have occurred, until today there is a very marked interest in this form of power. The latest application appears to be the perfection of the so-called electric steam boiler.

The following brief reading list is offered in the hope that a perusal of the articles listed therein may answer some of the questions regarding the use of electrical machinery in the pulp and paper mills.

Adjustable Speed Paper Machine Drive.
Paper 8, Nos. 12, 28-29 (Sept. 4, 1912).
Description of an installation in which speed control is secured partly by motor field and partly by armature voltage control. Illustrated.

Advances in the Electrical Manufacture of Paper.
J. Elec. 46, 128-129 (Feb. 1, 1921).

Artz, W. H.
Regulator for motor driven pulp grinders.
Chem. Met. Eng. 26, 367-369 (Feb. 22, 1922); Paper 29, Nos. 21, 10-13 (Jan. 25, 1922).
Description of the Westinghouse automatic load regulator for motor driven pulp grinders. This prevents all peaks of any consequence, and if ordinary diligence is exercised in keeping the pockets filled, every valley in the load curve, thus making a practically uniform straight load curve.

Artz, W. H.
Speed control of motor drives by frequency generators.
Elec. Rev. 79, 505-508 (Oct. 1, 1921).

Automatic Regulators for Pulpwood Grinders.
Elec. Age 50, 51-52 (1917); C. A. 11, 2153.
A new regulator of the Westinghouse type which brings about a reduction in the amount of splinters or shives and in the amount of short fiber carried away in the white water.

Baker, Joseph B.
Electric hints in paper mills.
Paper 3, Nos. 4, 12-15 (Apr. 12, 1911).

Barbillion, M.
Electric drive in paper mills.
Industrie electrique 29, 323-329 (Sept. 10, 1920); Papeterie 41, 610-616 (1919); C. A. 13, 627.
Advantages of electric drives in paper mills. Cost of installation.

Barrows, W. L.
Hydroelectric developments.
Paper 30, Nos. 2, 7-9 (Mar. 15, 1922); Pulp Paper Mag. Can. 20, Nos. 10, 175-176 (Mar. 9, 1922); Paper Mill 45, Nos. 8, 4, 7 (Feb. 25, 1922).
Discussion of the engineering problems involved in the application of electricity to the pulp and paper industry.

Blau, E.
Electric heating in the paper industry.
Zentr. f. Papierind. 38, Nos. 4, 78-79.

Bragdon, W. B.
Advancement in the use of electricity for papermaking.
PAPER TRADE J. 59, Nos. 4, 38, 140 (July 23, 1914).

TECHNICAL SECTION, PAGE 82

Braun, Carl E.
Automatic pulp grinder regulator.
Paper Mill 46, Nos. 28, 4, 6 (July 22, 1922); Pulp Paper Mag. Can. 20, Nos. 34, 715-716 (Aug. 24, 1922); Making Paper 4, Nos. 10, 285-288 (Apr., 1922).
Discussion of the Westinghouse automatic load regulator. See also article by Artz.

Central Station for Making Tissue Paper.
Elec. Rev. 75, 1027 (Dec. 20, 1919).

Clewell, C. E.
Motor drive in paper and pulp mills.
Elec. World 72, 152-54, 198-201 (July 27, Aug. 3, 1918).

Coates, Matthew C.
Paper mill electrification.
Aust. Min. Standard, Sept. 28, 1911.
Illustrates and describes particulars of an electrically operated paper mill.

Colcord, D. H.
Advantages gained in electrifying a paper mill.
Paper Industry 1, Nos. 1, 31-33 (Apr., 1919).
Discussion of the plant of the Brown Co., Berlin, N. H. Application to paper machines, jordans, electrolytic bleach, etc.

Conant, W. B.
Electricity in papermaking.
Elec. Rev. West. Elecn. 66, 371-375 (Feb. 27, 1915).
Discussion of the processes involved and the characteristics of the motors necessary. Gives data of typical plants.

Cronkhite, W. W.
Care of electrical apparatus in pulp and paper mills.
Paper Industry 1, Nos. 6, 438-439, 442 (Sept., 1919); Pulp Paper Mag. Can. 17, 793-794 (Sept. 18, 1919).

Cronkhite, W. W.
Care and upkeep of electrical equipment for the paper mill.
Paper 27, Nos. 10, 132-134 (Nov. 10, 1920).

Cronkhite, W. W.
Development of the electrical drive.
PAPER TRADE J. 72, Nos. 24, 33-34 (June 9, 1921).

Cronkhite, W. W.
Development of the use of electricity in paper mills.
PAPER TRADE J. 74, Nos. 15, 61, 63 (Apr. 13, 1922).

Cronkhite, W. W.
Electrical power equipment for pulp and paper mills.
Paper industry 1, Nos. 9, 718-721, 727 (Dec., 1919).

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Industrial Organic Chemistry

Industrial Organic Chemistry:—Adapted for the use of manufacturers, chemists and all interested in the utilization of organic materials in the industrial arts. By Samuel P. Stadtler, Ph. D., LL. D., Consulting Chemist; Past President of the American Institute of Chemical Engineers, and Louis J. Matos, Ph. D., Textile Chemist; Member of the American Institute of Engineers. New editions revised, enlarged and in part rewritten. 8 vo. pp. 707. J. B. Lippincott Company, Philadelphia.

It is at least unfortunate that the authors attempted to cover fifteen large subjects in the compass of a single volume of six hundred seventy-five pages, with a necessarily short space to each. It may also be unfair to judge the entire work by a single chapter such as that on "The Cellulose Industries," which contains thirty-eight pages of which twelve pages are devoted to papermaking. It is, however, hoped that other industries fared better than papermaking, for it will be difficult to conceive of treating a subject in a more cursory way and to find a greater number of obviously inaccurate statements in a shorter space than this section. A few of the inaccuracies are:

Soda Process—"The time of digestion is the same as in the 'quick cook' sulphite process."

Sulphate Pulp—"To obtain this long leaf pine is digested," no other species being mentioned.

Bleaching—"When chlorine is used 2.5 to 5 kg. of salt are taken as needed for 100 kg. of halfstuff."

Beating—"Wood pulp * * * requires *some six hours.*"

"Beaters of a totally different form are also largely in use. Thus in the *Jordan beater* * * *."

Loading—"Except in the very finest papers some mineral loading is incorporated with the pulp in the beater. This is, of course, in the main for cheapening purposes."

Sizing—"*All papers* except blotting papers *have also to be sized.*"

"With the resin soap is also added some starch."

Manufacture of Paper from Pulp—"Deckel or wire cloth frame * * *."

"Rolls of smooth, heated metal known as dandy rolls * * *."

"The speed of the fourdrinier is from 60 to 240 feet per minute, the *latter for cheap newspaper,* the former for the best paper requiring the most care."

"Tissue papers * * * are made from very strong fibers such as that of hemp bagging and cotton canvas * * *."

"Printing papers * * * of some special grades are given a smooth finish by calendering *instead of sizing.*"

Fibers—"Chemical wood pulp * * * flat ribbon-like fibers."

"The chemical reagent most useful in testing paper pulp is aniline sulphite."

New Idea for Estimating Mechanical Wood Pulp

"Mechanical wood pulp from pine wood possesses the property * * * of reducing gold solutions * * *. It is thus possible by weighing the reduced gold to estimate the mechanical pulp" in paper.

"Notable quantities of alumina in the ash point to the use of resinate of alumina as sizing material."

Flour City Tissue Paper Mills to Resume

SCOTTSVILLE, N. Y., February 19, 1923.—The paper mill owned by the Flour City Tissue Paper Mills Company of Rochester, which has been shut down since the death, a year ago, of Mr. Yawman, will resume operations, it is expected, about March 1.

Voting on Proposed Amendments

Members who have not returned their ballots are requested to do so without delay so that the result may be in readiness for the annual meeting, April 9 to 13.

PAPER PULP RECOVERY*

By L. M. Booth, Booth Chemical Co., Elizabeth, N. J.

As preliminary to the recovery and use of papermaking materials, let us:

First, determine if any are lost,

Second, discuss the use which may be made of the reclaimed stock,

Third, consider the efficiency and cost of the recovery process.

In order to make a fair start in this important business, the only necessary equipment for the manufacturer who has not already tackled this problem, is an open mind. Perhaps he has a general idea that the stock losses through the white water are more than they should be; still he will have need for his open mind, for he will surely be surprised when he sees the figures.

Certain Wastes Readily Preventable

Recently, particularly during the past year, many superintendents, engineers, and chemists have come to realize that certain wastes are readily preventable. With this as a hopeful starting point, many mills have made surveys of their white-water wastes to discover:

First, how much stock is being wasted, and

Next, to adopt the most efficient method of pulp recovery that is available.

In an investigation of stock losses in the excess white-water that finds its way out of the mill, there are just two items to consider, *first,* the number of pounds of papermaking materials per thousand gallons of white water, and *second,* the total volume of wasted white-water. The result of an occasional test is usually misleading. Therefore, the record should be made to show the suspended solids from samples taken at least four times each twenty-four hours for at least four weeks. In the absence of other means for determining the volume of water, weir measurements should be made and recorded at least as frequently as the samples of white-water are taken for examination. In some mills it is the practice to report the stock losses in terms of percentage consistency. The objection to this is that the figures being so far to the right of the decimal point, make the values look like rubles or German marks, and thus fail to create an adequate impression of their importance.

Using as a basis some thousands of tests of white-water passing from save-alls to sewers, it has been found that the stock losses run from 1 lb. to 10 lb. per thousand gallons. The lower limit is approached in the case of the white water carrying long fibers and in mills where the save-all equipment is maintained more carefully than usual.

Considering the fact that the stock in the white-water has already been through the wire once, it is not unreasonable to suppose that it will again pass through a screen, if the opportunity is presented. Of course some of the pulp is caught—usually from 30 per cent to 60 per cent of the applied pulp being retained by the mechanical screening device erroneously designated as a save-all.

White Water Tests

The following is a summary of tests of white-water made during 31 days in a mill using rag stock. During this period the mill chemist made 99 tests of the save-all waste water from their No. 1 machine. The minimum loss was found to be 0.18 lb., and the maximum loss 7.1 lb. per thousand gallons. An average of the daily averages was found to be 2.4 lb. per thousand gallons. 94 tests of the screen save-all water from the No. 2 machine showed that the losses ran from 0.03 lb. to 3.8 lb., with an average of 1.5 lb. per thousand gallons.

A characteristic of these tests, which is common to all which have come to my attention, is that there is a wide variation between the high and low figures. In the case of the No. 1 machine, the maximum loss is 39 times as great as the minimum whereas with the No. 2 machine, the ratio is 127 to 1. These figures demonstrate conclusively that one, two or even ten tests are very likely to lead to an erroneous conclusion.

After having determined the amount of waste per day or per year in pounds, dry weight, the loss in dollars can readily be computed. It will doubtless appear large enough, if it is assumed that the value of the lost stock is the same per pound as the cost of the raw materials. However, a fairer basis is to consider that the stock which went through the wire was finished paper, except for passing over the driers. Obviously, stock which has been beaten, bleached, sized, etc., is of more value than raw stock. For such grades of paper as require a well closed surface, the fine pulp and clay which have passed through wire, if they can be returned and utilized, are even more valuable, for the sake of the finish, per unit of weight, than is the average of the paper.

What to Do With the Stock

This brings us to the consideration of what to do with the stock after it has been saved. Many superintendents maintain that:

(a) The stock which passes through the wire is practically all short fibers and therefore worthless.

(b) They tried to use the pulp settled from white-water and abandoned it twenty-five years ago because it made the paper dirty, due to slime. Until you pin these fellows down, they would have you believe that the slime has something to do with the settling tank. Instead, as everyone who has given the matter any thought knows, it is merely papermaking materials which have adhered to a convenient surface and stayed there so long that decomposition sets in.

While the above objections to a settling tank system seem formidable, fortunately there are good and sufficient reasons why, under proper operating conditions, these disappear entirely. I will discuss the objections separately.

(a) *Fibers are short and worthless.*

It is not to be assumed that paper is to be made using only this short stock. It should be remembered that the white-water stock loss usually represents but from 2 per cent to 5 per cent of the production. The addition of this amount of short fiber stock, distributed uniformly, will have no appreciable influence on the strength. Length of fiber alone does not insure a strong paper and the retention in the sheet of a small amount of well beaten pulp can have no objectionable influence, especially since the surface will be improved. It will thus be seen that the importance of retaining this short fiber stock should not be minimized. Once it is in the sheet, it is worth just as many cents per pound as the longer fiber portion.

(b) *Settled pulp makes the paper dirty.*

The cleanest part of the stock is that which passes through the wire. This being the case, how does it produce the dirty paper we are told about? I will tell you; it is because they tried to make paper on Saturday out of pulp which should have been shipped as finished paper on Tuesday. The ordinary white-water tank, used for beater supply in the average mill, is a sorry sight, especially on Sunday, when emptied and the whole of the slimy mass washed out into the river. Of course it is then too late to do anything with the decomposed cellulose, except to make it a subject of a belated inquest. We never attempt to make paper out of slimy pulp showing dark spots. We see that the pulp is made up into paper before it has a chance to decompose.

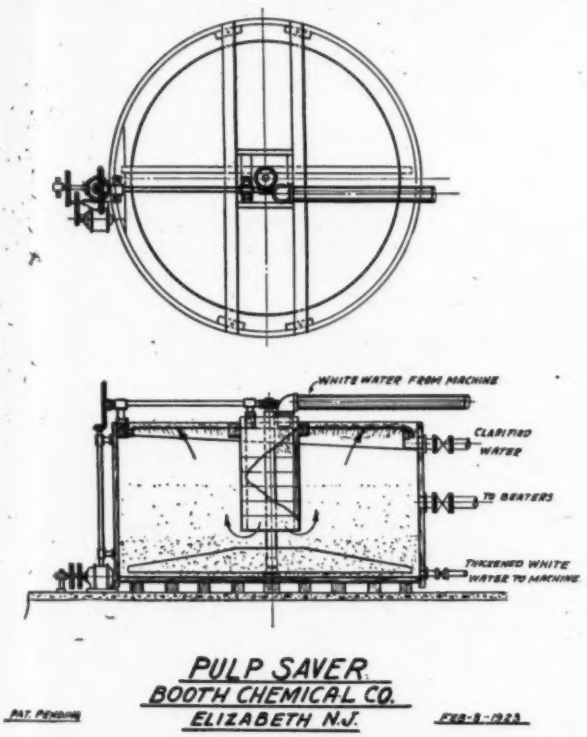
*(Read before the Michigan Division of the American Pulp and Paper Mill Supt. Association, Kalamazoo, Mich., February 15, 1923.

Efficient Recovery Process

Next comes the consideration of an efficient recovery process. It is needless to dwell on the time honored stock-saving methods. You are all familiar with them. It was with a view to preventing the losses and wastes incidental to the use of existing pulp-saving equipment that the process which I am now about to describe was developed about two years ago. The principles involved are by no means new. They are entirely familiar to all of us who have to do with the operation of mechanical filter plants, using coagulants, in the purification of mill and other water supplies.

Paper stock can be recovered by chemical coagulation, followed by sedimentation, in much the same manner as mud and other objectionable substances can be coagulated and settled out of a dirty river water.

Fortunately the means, mechanical and chemical, for carrying out the process are at hand. Recourse is had to the use of a dry



feed machine to feed Boothal, which has been successfully used for several years in the purification of low alkalinity water supplies.

Boothal contains sulphate of aluminum and an alkali. It is particularly well adapted for the coagulation of solid matter in waters which are close to the neutral point and, therefore, are of low alkalinity or low acidity. Having these characteristics, it will be seen that Boothal will be effective in the coagulation of the stock in a white water carrying the usual excess of alum found in the white water of a sized paper. Since the components of this coagulant are acid and alkaline, it is obvious that it may not be mixed and fed as a water suspension or solution, for the reason that the ingredients soon mutually react. Therefore, it is always the practice to apply the Boothal as a dry powder to the white water to be coagulated.

The first installation of this system of pulp recovery was in connection with an existing pulp-reclaimer tank, where the efficiency of sedimentation was low, thus permitting a large stock loss. A well merited objection to pulp-saver settling tanks, depending on unassisted sedimentation, especially in book paper mills, is because of the tendency of the stock to adhere to the bottoms of the tanks. This trouble occurs even though the bottoms are conical and sloping so steeply as to retain only materials which will adhere when slowly deposited.

After a considerable thickness of pulp and clay has been built up on these steep sloping conical bottoms, it will break away at intervals and slide to the apex of the cone bottoms. This, of course, has a tendency to increase the weight of papermaking materials in the thickened pulp. Because of the lack of uniformity of the thickened white water flowing from such a tank, it is obvious that it cannot be used directly back on the paper machine without influencing the weight of the paper.

Boothal coagulates the fine pulp and clay or other loading materials present so that these will settle more promptly than where plain sedimentation is attempted. In addition to this, the effect of the formation of the aluminum hydroxide precipitate produced is to prevent the adhesion of the stock to the tanks, piping, etc., so that the possibility of forming slime is practically eliminated.

A Suitable Form of Tank

One of the most suitable form of tank for use in white water recovery is shown on the accompanying print. This tank is provided with a slowly moving agitator, traveling at the rate approximately 3 feet per minute, at the circumference. At this slow speed, no appreciable interference with the clarity of the water at the surface is caused. The white water, to which the coagulant has been applied, enters the central downtake conduit and is delivered to the lower portion of the pulp saver. After the thickened stock has accumulated in the lower portion of the pulp saver for a period, which is usually less than one hour from the starting of the paper machine, the outlet valve controlling the flow of thickened pulp from the bottom of the pulp saver is opened, and the thickened pulp may then be continuously delivered to the paper machine or elsewhere for use, or to be stored.

In operation by this process, it is the practice to control the withdrawal of the thickened stock so that an amount corresponding to approximately 90 per cent of the papermaking materials in the white water is withdrawn from the thickened pulp outlet. This uniform draft, together with the continually slowly moving agitator, has the effect of maintaining a high degree of uniformity in the consistency of the stock thus treated.

From a point higher in the tank, usually four or more feet above the bottom, water for beaters is withdrawn from the pulp saver tank at intervals as required. The withdrawal from this upper level prevents the undue accumulation of stock in the pulp saver tank. Usually from 6 per cent to 9 per cent of the pulp is withdrawn from this upper level.

Due to the influence of gravity, assisted by coagulation, by far the greater portion of the pulp remains in the lower portion of the pulp saver. The result is that the clarified effluent, usually contains less than 3 per cent of the amount of stock carried by the entering white water. It is the practice in a number of mills using this process to use the clarified water flowing from the top of the pulp-saver tank, on the showers. In most instances, because of the high degree of uniformity of the thickened stock, it is introduced directly into the headbox of the paper machine, where its money value is the greatest.

Among others, the following kinds of papers are being made on machines equipped with Boothal pulp-recovery process:—Bond, book, bristol, detail drawing, manifold, bright manila, manila envelope, newsprint, offset, rope stay, and saturating papers.

The Technical Section of The Papermakers Association of Great Britain and Ireland has recommended that the permissible loss of stock in white water be limited to the equivalent of 0.33 lb. per thousand U. S. gallons. This standard of excellence may be readily attained by the process just described. The cost of operation is from ½ cent to 1 cent per pound of recovered stock.

USE OF PULP AND PAPER TEXTBOOKS

R. S. Kellogg, secretary of the Vocational Education Committee of the Pulp and Paper Industry is sending out the following letter regarding the use of the text books prepared by the committee:

The time has now come and the facilities are available for practical use of the textbooks upon the manufacture of pulp and paper.

In November, we sent you an outline of the facilities for correspondence and class instruction based upon these textbooks offered by the Extension Division of the University of Wisconsin, the Institute of Industrial and Domestic Arts, and the Massachusetts Division of University Extension.

The Institute of Industrial and Domestic Arts has started a vigorous canvass of the pulp and paper manufacturing centers in Canada and already has more than 170 students enrolled for correspondence instruction, representing many well known mills and some in the United States. This number will be rapidly increased as representatives of the Institute visit other localities.

While the Extension Division of the University of Wisconsin does not have the facilities for making a personal canvass of the field, such as is being made by the Canadian organization, enrollments are, nevertheless, proceeding at satisfactory rate. A recent letter from Madison contains the following information:

Sixty Students Enrolled

"The enrollment to date totals sixty students. Of these, thirty-nine are members of a study class organized in the three adjoining Wisconsin towns—Nekoosa, Port Edwards, and Wisconsin Rapids. This class meets weekly and discusses the current assignment under the direction of a representative of a University. The written work is completed by the men after the class hour and papers are forwarded to the Extension Division, being graded by members of the Laboratory staff. Ten of the remaining twenty-one students enrolled are residents of Wisconsin, three reside in New York State, two in Illinois, two in Minnesota and one each in Ohio, Indiana, California and Maryland.

"All enrollments to date have resulted from such publicity as was given the course through the medium of the several industrial journals. No active solicitation of students has been undertaken by the Extension Division up to the present time. The study class mentioned was initiated by mills in the vicinity.

"The occupations of the students as indicated on the enrollment blanks are as follows:

Assistant Managers	1	Truckers and roll pluggers	4
Superintendents	5	Oilers	2
Foremen	4	Plant engineers	3
Chemists	1	Clerks	2
Draftsman	1	Salesmen	4
Machine tenders and helpers	13	Editors	1
Cooks	7	Unclassified	12"

Correspondence instruction may be taken from the Extension Division of the University of Wisconsin regardless of residence in that state, the only difference being that non-residents pay a registration fee of $2 in addition to the regular instruction fee, which is very small.

Courses Based on Volume III

The courses offered by the University of Wisconsin based upon Volume III of the textbooks are as follows:

Preparation and Treatment of Wood Pulp (Complete Course) 32 assignments, Instruction fee $20.

Manufacture of Mechanical Pulp, 20 assignments, Instruction fee $15.

Manufacture of Sulphite Pulp, 19 assignments, Instruction fee $15.

Manufacture of Sulphate Pulp, 20 assignments, Instruction fee $15.

In addition to the instruction fee, the cost of the textbook is $5, thus making a range of from $15 to $25 in cost of the courses for residents and of from $17-$27 for non-residents of Wisconsin.

These courses have been very carefully worked out and the papers are graded by men thoroughly trained in the manufacture of pulp and paper who are connected with the Forest Products Laboratory at Madison.

There is no reason why study classes should not be organized in other paper making localities just as has been done at Nekoosa, Port Edwards and Wisconsin Rapids. All that is required is some appreciation of the value of the undertaking and some initiative by interested executives who can easily arrange for capable men in their organizations to meet with the study classes once a week and discuss the assignments received from the University of Wisconsin.

One of the fundamental purposes behind the preparation of the text books was to afford opportunity for every ambitious man in the pulp and paper industry to increase his knowledge of the operations involved and qualify himself for better work and higher position.

The opportunity is now here. Will you not take advantage of it?

For Print Paper Industry in Alaska

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., February 21, 1923.—Negotiations are under way which are expected to initiate the establishment of an important industry in southern Alaska capable of furnishing perpetually a large proportion of print paper demands of the United States. Secretary Wallace of the Department of Agriculture expects soon to sign contracts with a number of responsible concerns for the purchase of pulpwood from Alaska national forests and for the allocation of water-power sites through the Federal Power Commission for the purpose of manufacturing both pulpwood and paper. On the Tongass national forest it is estimated there is a source of supply of timber which can furnish perpetually an annual yield of print paper equal to one-third of the total national consumption of the United States.

The industry, when established, will be upon a permanent basis with raw materials at a reasonable price.

For some time the forest service has been collecting the information essential to the practical development of the Tongass national forest, and the work is well toward completion. The merchantable timber on that forest includes at least 100,000,000 cords of western hemlock and Sitka spruce.

As a step forward the establishment of the paper industry in Alaska the Tongass forest has been tentatively divided into fourteen zones, each embracing sufficient timber to furnish a large paper mill with a permanent supply of raw material. Each zone has been delineated so as to include water-power sites sufficient to meet the requirements of manufacture.

The Federal Power Commission has been co-operating with the forest service in securing the water-power data. In addition to providing reliable information regarding water power available for the Alaskan paper industry, the work has resulted in the discovery of a number of valuable water-power sites not heretofore known to exist, notably one permitting the development of from 22,000 to 24,000 horsepower at very low cost.

T. A. P. P. I. Convention April 9-13

The annual convention of the Technical Association of the Pulp and Paper Industry will be held at the Waldorf-Astoria, New York, April 9-13.

Section of the

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COSTING AS A FUNCTION OF MANAGEMENT

By J. R. BLYTHE, F.C.W.A. IN THE COST ACCOUNTANT

There is no phase of human activity that presents such infinite variety in its methods as modern business, and this is the more remarkable in view of the identity in purpose of all business. One might be tempted to conclude that this perplexing diversity was fundamental and had its origin in the conditions affecting not only each industry and branch of commerce, but also each undertaking engaged therein. This diversity is, however, found to be largely accidental, and is not casual. It is explained by the fact that the process of evolution in industry and the development of industrial organization have proceeded along different paths and have reached different stages in their progress.

The increased size and complexity of modern industrial undertakings have necessitated division in responsibility and delegation of authority, which in practice may have been carried out in any one of the following ways:

1. In relation to Management Functions.
2. In relation to the products manufactured.
3. In relation to the geographical position of the various works.
4. In relation to the development of the individual responsibility and authority of Executives.
5. By some inter-relation of any of the above.

Devolution through development of the individual responsibility of Executives is the most potent cause of the variation in the methods of organization; and this is to be expected, and particularly in a country where industries have been long established and their development has been one of slow growth and the gradual adaption of means to ends rather than any radical alteration in the principles of organization.

In face of the existing diversity in the methods of organization, one is prompted to ask whether it is practicable to evolve a science of management, in which the functions of management and their inter-relation could be clearly defined.

While it is not our present purpose to deal with the larger aspects of this problem, it behooves us as Cost Accountants to consider in what relation we ought to stand to the body politic in industry.

Industrial activity falls naturally into three main divisions, viz:

1. Production (or operation).
2. Distribution.
3. Financial.

The early development of Cost Accounting took the form of an offshoot of one or other of these divisions. Now it would consist in some figuring of "prime cost" for the use of those controlling production, and again in the compilation of prime cost with the addition of a percentage to cover overhead charges for the use of the Distributing and Financial Divisions. In the latter case it might also be used to call the Works Management to account when the figures revealed some excessive cost or exceptional expenditure.

In many cases, and especially in the quite small business, these circumstances were inevitable; but they have given rise to a good deal of misconception as to what costing really is and who should be responsible for the design and control of the cost system. In this connection it may be well to contradict two extreme uses viz.:

1. That the Works Management should be responsible for the design and control of the Cost System.
2. That the Accounting Department should undertake this responsibility to the complete disregard of the Works Management.

Each of these theories, which are all too frequently put into practice, reveals a singular lack of appreciation of the character and purpose of costs, which may be defined as the machinery to provide cost data for each of the three main divisions in industry, viz: Production, Distribution and Financial.

No one more than the Engineer and the Works Manager should be able to appreciate the futility of endeavoring to have the component parts of a machine designed by different designers each working to different ideals and without any co-ordination of their efforts. Such an attempt would constitute a contravention of a first principle of organized effort and would be foredoomed to failure.

We may find instances of the Engineer having designed, and designed successfully, a cost system; but it should be realized that he has done so not by virtue of his primary position as Technician or Works Manager, but by his having assumed the additional function of Cost Accountant, in which he must have had an opportunity to qualify. Cost Accounting is based on a few relatively simple principles and this fact is deceptive. It has induced the belief that a knowledge of Workshop practice coupled with some degree of familiarity with the principles of Accounting are all that is required to design and operate a costing scheme.

At the other extreme we have the Cost Accountant who treats costs as a mere amplification or appendage of the financial accounts and who does not acknowledge the right of the Works Management to be heard in the matter.

Such a contention from the Accounting side of the business is just as untenable as the pretensions of the Works Management and springs from the same cause, viz., failure to realize the true purpose of costs.

Each of these theories regarding Cost Accounting constitutes a reaction from the other.

The Function of Cost Accounting

Cost Accounting is a definite and distinct function, the purpose of which is to render aid to each of the three divisions, viz., Production, Distribution and Financial or such sub-division as may exist in any particular case. The system should be designed by the Cost Accountant in consultation with the Executives in control of each division of the business, who would state their requirements, it being the function of the Cost Accountant to provide for meeting these requirements in conformity with the best canons of Cost Accounting. The Cost Accountant would further consult with the General Management as to how far these requirements could be met with the organization to be made available for costs.

The Cost Accountant must be a specialist, not merely in his knowledge of accounting and workshop practice, but also by his ability effectively to combine a knowledge of accounting with at least a high degree of familiarity with the process of manufacture. In a Shipbuilding and Marine Engineering Works, for example, he would require to possess a rudimentary technical knowledge and a wide range of familiarity with ship construction rather than a high standard of technology which is beyond the reasonable requirements of a Cost Accountant's qualifications. Even where it may be expedient for a Cost Accountant to possess more than a rudimentary technical knowledge as distinct from mere familiarity with the process of manufacture he would not be required to attain such a high standard as those in control of production who are required to apply their knowledge constructively.

It is not the function of the Cost Accountant, no matter what his standard of familiarity with, or knowledge of, the process of manufacture may be, to interfere in matters of technology or methods of production. It is, however, his function to reflect the cost of such comparatively with any standards available, past or present, *or with any standards extraneous to the business that may become available through cooperation between manufacturers,* or at the various works of a combine.

It is always the function of the Cost Accountant to deal not merely with costs, but with causes underlying any costs that call for comment.

It is the peculiar combination of knowledge and experience above referred to that is at once the difficulty of cost accounting and imparts to it the value that it possesses as an agent of success in modern industry.

I would now direct your attention to one aspect of business organization, with which we are peculiarly concerned as Cost Accountants.

Co-ordination in Industry

The small business in which the administration and the higher technical knowledge are either wholly centered in one man—usually the proprietor—or are immediately and continuously under his control gives the opportunity of attaining an ideal in co-ordination. Here we should find no working at cross purposes, but, instead, a perfectly harmonious effort directed towards one aim. This constitutes one of the few advantages of such a business in competition with a large organization in which this unity of effort must be attained by quite different means and is not so well assured.

The economists have been busy with this idea of co-operation. John Stuart Mill refers to the matter as follows:

"Works of all sorts are daily accomplished by civilized nations not by greatness of faculty in the Agents, but through the fact that each is able to rely with certainty on the others for the portion of the work which they respectively undertake. The peculiar capacity of civilized beings is the capacity of cooperation."

If we now consider the case of a large industrial undertaking organized on the basis of delegating the administrative and technical functions to specialists, we see the possibility of each function being developed by concentration to the highest point of efficiency, thus apparently ensuring the success of the undertaking. In practice, however, it is found that success is by no means a corollary of the wise delimitation of functions and their efficient development, which merely place at the disposal of the general management the means of effectively carrying out their policies.

The familiar saying that the success of a Captain of Industry is dependent on his choice of Lieutenants is a sort of half truth, which, however, suggests appreciation of the fact that success in industry is also dependent on effective cooperative between the Executives or technicians in control of the several functions.

Scientific management has been defined as the "wise use of co-ordinated knowledge."

Occasionally we find a Captain of Industry who fully realizes the need for delegating the functions of industry, both administrative and technical, to specialists, merely retaining the co-ordination of these functions in his own hands in addition to determining the major policy of the business. Such a one is not so much an administrator as a co-ordinator of administration. When this faculty is manifest in a high degree and co-exists with vision and enterprise we are compelled to marvel at the result.

Some Carnegie, Ford or Leverhulme embracing these elemental principles of organization and being endowed with initiative and enterprise in the highest degree works a revolution in industry.

The Great Napoleon claimed that there was nothing incidental to the organization and equipment of an army that he could not perform even to the forging of a cannon. It was, however, by the display of quite other qualities than those requisite to the art of forging that Napoleon came near to conquering Europe.

It may appear that I have unduly emphasized the importance of co-ordination in industry as viewed from the standpoint of Cost Accounting; but I have done so with a definite purpose.

It was stated that it is the function of the Cost Accountant to render service to each of the three divisions in industry, viz., Production, Distribution, Financial. The Cost Accountant, therefore, occupies a key position. He is a liaison officer and as such should act as interpreter between the various executives with whose activities he is concerned.

The manufacture of a commodity, its distribution, and the financial control of the business each represents a quite distinct type of activity, and the executives in charge of these respective functions are likely to be men whose training, knowledge and experience are totally different. The greater their concentration as specialists and the higher the degree of their particular technical knowledge, the more marked may be this distinction. Yet it is essential that certain phases of the activity of each should be intelligible to the other so as to facilitate cooperation. The ultimate purpose of their combined efforts is the economic success of the undertaking and it is upon this common ground that they must meet.

The Cost Accountant has a threefold obligation to fulfill, viz:

1. To design and operate the Cost System so that the function of Cost Accounting may be developed to the highest degree of efficiency per se. This may be called Cost Accounting Passive.

2. To so cooperate with the other executives as to render Costs of maximum utility.

3. As liaison officer to further co-operation between executives, the inter-relation of whose activities bears upon cost, and by this means to help in achieving the object of all organization, viz., co-ordinated effort.

The latter two obligations entail Cost Accounting Active, and would be essential to the full attainment of the first object which in itself would be of little value to the business.

It is not by any means imagined that Cost Accounting will be instrumental in healing all the ills of industry and constructively in

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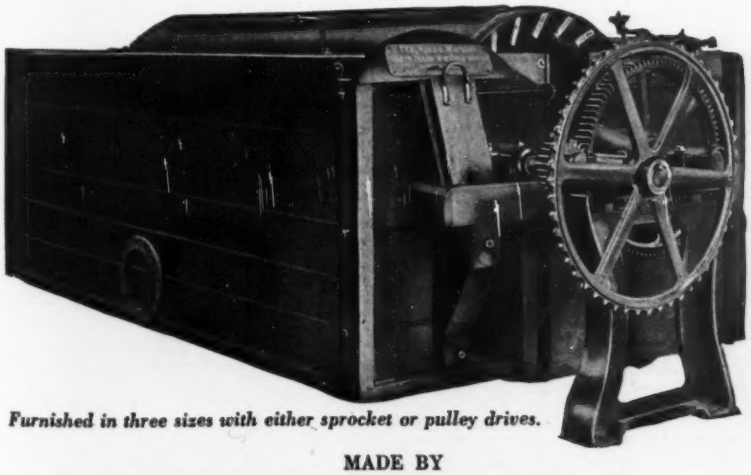

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achieving the larger purposes indicated under the heading of industrial organization; but it is claimed that the Cost Accountant is peculiarly in a position to give vital aid in this matter.

Are Costs Really Necessary?

I recently read two treatises on Costs—one British and the other American—and both written within the last two years. In the former the statement was made that not one percent of the manufacturers in this country producing a variety of articles had reliable costs of each article. In the American book a somewhat similar statement was made, only the percentage was placed higher.

Whilst it is difficult to generalize in this matter, there is sufficient authority behind these statements to be taken as an indication of the present condition of Cost Accounting. The fact that the vast majority of business are operated without reliable costs being determined might be taken as an indication that Costs were not an absolute essential for the safe guarding of a business undertaking.

There are, however, two ways in which a business may achieve success, viz:

1. Through its attaining an essentially high standard of efficiency.
2. Through the relatively low efficiency of its competitors.

This latter position is always open to attack, and as international competition becomes keener, and there is every reason to believe that it will, this negative advantage will tend to be eliminated.

Great Britain was first in the field with many of her industries and this fact, coupled with the production of high-quality goods, gave large foreign markets with ample profit margins. The continuance of the advantages which this country has enjoyed is too much to expect and we shall certainly have to face the keenest competition in the future. That any business with inadequate or unreliable data concerning costs can long engage with safety in such competition, and especially under the unstable economic conditions that are likely to prevail for some years is highly improbable.

Special Difficulties of Present-Day Costing

During the past few years Costing has been conducted under conditions which were unique—in degree if not in kind. Never before have the elements of cost undergone such rapid and enormous fluctuations. In addition, the output of many works—greatly increased during the war period—has diminished to very small proportions. As a result the business man is somewhat perplexed with regard to Costs. All his standards of value, actual and comparative, have been upset and in many cases he looks in vain to his cost records for the guidance they afforded in times of greater stability.

Cost accounts that are a barometer only during periods when stable and normally favorable conditions prevail do not measure up to present-day requirements.

We should do well to seek the cause of this state of things, and if possible suggest some remedy.

No doubt we have all read a good many treatises on Cost Accounting, and it is surprising how many of them commence somewhat in the strain of the opening paragraph of "Caesar's Gallic War."

Just as all Gaul was divided into three parts, so all costs are divided into three parts, viz.: Labor, material and a somewhat mysterious and ill-defined third component which has a choice of description as varied as the orthography of the name of our greatest dramatist. The budding Cost Accountant of the past was by this teaching led to believe that if he could correctly charge the first two factors of cost to a specific article or product and could thereafter discover some subtle affinity between the third factor called burden, etc., etc., and one or other or even both of the factors of Costs already determined that his costing problem would be solved.

There is a psychological reason for all this. Consider the early craftsman engaged in making an article by hand labor. The finished article would be represented by the material incorporated in its construction and the labor and skill of the craftsman, who, however, came vaguely to recognize the existence of a third element incidental perhaps to the provision of shelter and the wear and tear of tools. The craftsman figuring his selling price—probably mentally—would be faced with the dilemma of providing for this indeterminate third group which we may call overhead. What more natural than he should adopt the familiar mental process of passing easily from the known to the unknown by simply adding something to the already known factors of cost—say so much per hour of time spent, or 5 cents per dollar of labor and material cost.

Many of the current ideas on Costs are really a survival of the early reasoning of those who were first called upon to do some crude figuring of costs. There is nothing surprising in this state of things, which is by no means confined to Cost Accounting.

The labor factor of cost came to be considered as a key factor. It is *not* and never has been a key factor although it partook of the nature of a key factor in primitive industry where labor was all predominant. At the present stage of development in Costing, I am quite conscious of the value of the labor and man-hour bases in practice and confess to their employment in my own work; but am very chary of imparting to such an expedient the dignity of a principle much less a doctrine as has so often been done.

It would be decidedly advantageous if everyone taking up the study and practice of Cost Accounting would approach this matter with an entirely open mind and with the determination to investigate and determine the true incidence of each factor of cost in every specific case, even although circumstances may temporarily prevent the adoption of all his findings.

The beginner should in the first instance insist upon the identity of every element of expense being clearly preserved so that it may be considered as providing, or contributing to the provision of, some service incidental to manufacture, and that the true incidence of expense to a given process, product or artcle is determinable by the nature and extent of the service rendered rather than by any arbitrary relationship to some other factor of cost.

Assume for a moment, for the sake of illustration, that industry adopted a completely in place of a partially, paternal attitude towards its employees, and in place of paying them wages in the form of coin of the realm, the employer provided all the necessaries of life on a predetermined scale of quantity and quality—roughly the equivalent of a time-worker's wages. The elements of expense incidental to the employment of a workman, e.g., house rent, transport, food, clothing, education, pension fund, picture theatres, etc., etc., would then require to be segregated in order to determine the cost of a workman's services. Certain elements of expense would be common to groups of workmen and would call for apportionment. It is not the purpose of this illustration to submit the above as a practical idea in sociology although it is partly in operation in our largest industry—agriculture—but merely to illustrate the fact that the same principles ought to govern the allocation of every factor of cost as at present governs Labor Cost. Labor Cost is at present allocated on the basis of service rendered, nominal or real; but the fact that such allocation is relatively easy owing to the workman being paid a definite sum of money for a given period of service or the performance of a given task is largely accidental and does not affect the principle.

The advantages of adopting these principles in Costs are many, e. g.:

1. A more accurate cost will be determined.
2. Each Factor of Cost representing the supply of some service will be capable of being measured up in relation to its capacity for service to production and the actual service rendered.
3. It will facilitate comparison in detail of the costs at different

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works engaged in the same industry where such is practicable.

4. It will facilitate comparison of the cost of any service common to various works whether in the same industry or not.

5. It will enable the management to give to each officer responsible for the maintenance of any service definite responsibilities with regard to efficiency of service from the economic as well as the technical standpoint.

6. It will allow of comparison between actual performance and the standard set.

7. It will facilitate the investigation of the cause of any failure to attain the standard of cost set up, causes being analyzed into those extraneous to a given officer's activities and those for which he is responsible.

What Is Cost?

Is cost always and inevitably the sum of expense incurred during, or applicable to, the period when the production and sale of an article have been carried out and allocated with such accuracy that the sum of the cost of output reconciles with the expenditure per the financial books and irrespective of whether output is normal, 50 per cent of normal or 150 per cent of normal?

Or is cost the sum of expense incurred in supplying those materials and services actually required for the production of an article, but excluding the cost of any service or part of a service not utilized?

In short, should we derive "actual" or "standard" costs or both?

Should we derive a cost on purely financial principles or on economic principles?

The traditional method has aimed at deriving "actual" costs only, and I contend that such do not meet all the present-day requirements of industry if indeed they ever have done.

The Sales Manager who is concerned mostly with total cost sees the cost mounting up as output diminishes and this, perhaps, in face of an actual decrease in the first elements of cost, e. g., Labor, Fuel, Material, etc. He may recognize that it is futile to attempt to sell his goods at cost much less at a profit; but at what price is he to sell? If competition demands cut prices, how far can he cut? He may be impelled to follow the lead of his competitors and may feel a lurking sense of security in the belief that it is unlikely that these will so cut prices as to jeopardize their position. His competitors may be equally badly placed in the matter of reliable and adequate costing data, and in the absence of such will almost inevitably under-estimate the true cost, and particularly under present conditions.

One of the greatest dangers the business man of today has to face is competition founded upon ignorance and foreign competition in many cases inspired by motives ulterior to the immediate purpose of profit-making, to say nothing of competition which is subsidized by currency deflation being accompanied by a disparity between internal and external purchasing power as manifested in the case of the mark.

The derivation of standard, as well as actual, costs is essential, so that the portion of expense due to inefficiency in production and distribution through diminished output may be separately shown. When the cost of idleness (or in other words the unutilized portion of capacity for production, etc.) is recognized as something distinct in the economic sense from the cost of manufacture, it will be possible to compile costs which will retain their significance whether the standard of output is, say 100 per cent, 70 per cent, or 130 per cent of normal.

By this method we are adopting the familiar expedient of eliminating a variant which is not germane to the problem. This practice is quite familiar in our daily lives and is, moreover, employed by the scientist.

Take the instance of a comparison of the speed capacities of various aeroplanes which have been severally tested under varying conditions of wind velocity. A 'plane that has attained a speed of 80 m. p. h. in a calm is compared with one that has reached 70 m. p. h. with a head wind of 40 m. p. h. The comparison is rendered effective by the elimination of the variant of wind pressure, when it is found that the slower aeroplane in relation to distance covered in a given time has the higher speed capacity.

Aristotle, failing to recognize and eliminate the variant of air resistance, pronounced the theory that bodies fall at a speed in direct relation to their weight, which theory was accepted for nearly 2,000 years, viz., until it was discovered that all bodies fall at the same speed in "vacuo."

A single variant may be easy to locate and eliminate, but when there are more than one variant this process is complicated. To illustrate:

I recently observed that whereas 100 K. W. H. were consumed in running the machinery to produce one ton of a certain product, this increased to 130 K. W. H. when the output dropped from normal to about 50 per cent of normal. In this case the question arises:

Was the whole of this increase inevitable and due to the essentially diminished standard of operating efficiency, or was it only partly due to this cause and in part to another circumstance, viz., less economical use of power occasioned by the management having had their standards of comparative efficiency upset and being induced to relax control on that account?

Here we are faced with a position where we can locate one variant and suspect the existence of another whose identity and amount is obscure; but which it is equally important to bring forth into the light.

If we consider for a moment the various elements of the cost of a product from piecework wages to such items of fixed charges as Rates and Fire Insurance we find a variation in the incidence of each item of expense to the unit of output caused by fluctuations in the volume of output. In the compilation of an actual as opposed to a standard cost, this variation in incidence passes from zero in the case of piece-work wages to the absolute variation of fixed charges.

In directing attention to this matter I would invite your consideration of it along the following conditions:

1. When output is normal.
2. When output falls to any given point below normal.

If so, a predetermined standard of efficiency could be set up which would operate under all conditions and would always allow of comparisons being made between periods when the output standard showed variations.

The cost accountant must take a leaf from the book of such inquiring souls as Bacon and Galileo. He must not content himself with effect or superficial facts, but must observe and record the phenomena of industrial economics until he can pass from thence to the cause.

Modern industry is beginning to travel a new road. It is adopting the method of the scientist not merely in the sphere of technology, but also in that of management. It is concerned with predetermining results as well as observing and recording the results achieved. It is endeavoring to be master of its own destiny. It is striving to diminish, if not to dominate, the element of chance as distinct from opportunity. It is following the ideal so well expressed by Emerson when he wrote:

"In the Will work and acquire and thou hast chained the wheel of Chance and shalt sit henceforth out of reach of her rotations."

Paper Specifications Committee Reappointed

Washington, D. C., February 21, 1923.—The Joint Congressional Committee on Printing has appointed the Paper Specifications Committee to draw up specifications for next year for the Government Printing Office. The same committee will act that acted this year and it is required by the Joint Committee's resolution to report on or before December 9. The appointment of the committee was made necessary at this time because Congress will be in adjournment until next December.

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Kalamazoo Meeting

A meeting of the Kalamazoo Local Division of the Cost Association of the Paper Industry will be held at 2:00 P. M. on February 23, at Kalamazoo, Mich. A splendid program has been arranged as follows, and it is hoped that as many mills as possible will be able to send representatives to attend the meeting:

3:00 P. M. Opening Address—Geo. K. Ferguson, Watervliet Paper Company.
"How to Establish Machine Hour Rates."
6:15 P. M. Dinner.
7:30 P. M. Address—Elbert Milham, Head of Technical Department, Bryant Paper Company.
"Technical Control in Relation to Costs."
Address—Geo. T. Jubb, Kalamazoo Paper Company.
"How Charges to Repair, Replacement and Equipment Affect Cost."
Address—F. E. Siedman, C. P. A.
"Income Tax Factors that Affect Costs."

All mills are cordially invited to send their representatives to this meeting.

Berkshire Meeting

Wm. W. Howe, of Z. & W. M. Crane Co., Dalton, Mass., President of the Berkshire Local Division of the Cost Association of the Paper Industry has issued the following notice regarding the next meeting of that Division:

The Regular Meeting and Dinner of the Berkshire Local Division of the Cost Association of the Paper Industry with be held Tuesday afternoon, February 27, 1923, at 2 o'clock at the Irving House, Dalton, Mass.

At this meeting Z. & W. M. Crane will display and explain the physical workings of their Cost Finding Practice.

An invitation is extended to the members to visit certain of the Crane mills.

Dinner will be served at 6:30 P. M.

Let's make this first meeting of the year a good one.

Bring along your entire Cost Department.

Please make your reservations early. Also please state whether or not you wish to visit the Mills.

This promises to be one of the best meetings yet held by this Division and all mills in that district should endeavor to arrange for the entire staff of their Cost Departments to attend. Don't forget to advise Mr. Howe as early as possible how many you expect to send so that he may make proper arrangements for their accommodation.

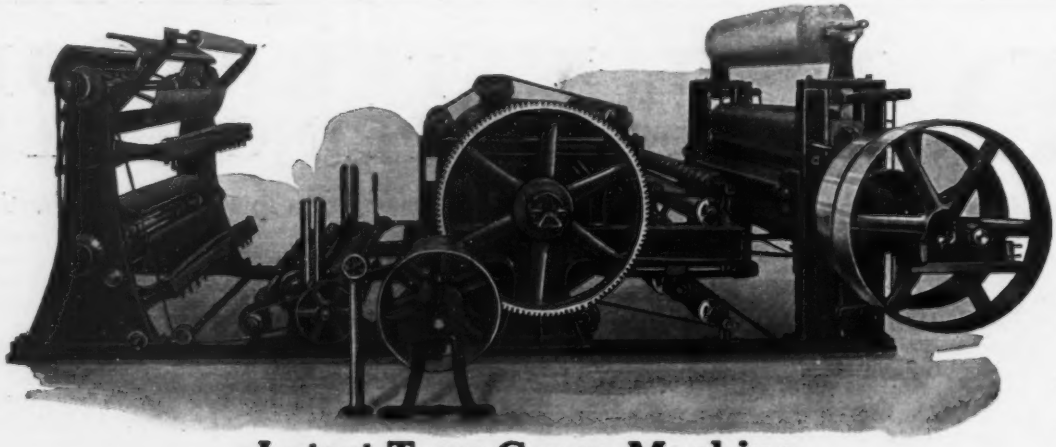
Wisconsin Paper Men Holding Meetings

[FROM OUR REGULAR CORRESPONDENT]

WAUSAU, Wis., February 19, 1923.—A series of conferences of paper manufacturers of the Wisconsin paper manufacturing districts begins tomorrow with a meeting of the manufacturers of the Wisconsin river valley, and will conclude with a similar meeting at Appleton on Tuesday, February 28. Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, a Wisconsin native who is best known for his work as a forester, and for eight years dean of the New York State College of Forestry at Syracuse, will be the chief speaker at these meetings.

During Dr. Baker's visit to the Wisconsin mills he is to address several Rotary Clubs, the first being a talk on "Forestry and the Paper Industry" before the Wausau Rotary Club this noon.

The meetings of paper manufacturers will be devoted to the discussions of such subjects as foreign competition, the better development of the export trade in paper, and similar subjects of importance to the entire paper industry, not the least being the problem of future raw materials, particularly pulpwood.



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NEW YORK

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, FEBRUARY 21, 1923.

The highlights in last week's paper and pulp markets may be summed up as follows: mechanical pulp declined quotationally from $2 to $4 per ton as a consequence of easier water conditions; chip and straw board fell off slightly, but all other markets evidenced increased signs of firmness with a tendency toward rising prices; storage rates for chemical pulp at the port of Boston were greatly increased and the period of free storage granted importers was cut to less than one-half, as a result of the decision of the Interstate Commerce Commission to uphold the storage tariff ruling of the Boston & Maine Railroad; freight embargoes continued to hamper both incoming and outgoing shipments to and from mills; rag markets were strengthened by protraction of New York textile workers' strike, and chemical pulps occupied a very solid position, due, partly, to heavy mill demand, partly to high waste paper and other raw material prices and partly to the threat of curtailed Scandinavian output resulting from the widespread pulp strike in Sweden.

All obstacles considered, New York paper, pulp and paper stock markets are in a decidedly better position than they have been in for many months. Numerous fine and coarse paper houses are booked up for practically the balance of the current year and one large pulp dealer last week stated that his house was covered on contract up through next September. Less trepidation is evidenced in buying and in nearly every paper market the issue has resolved itself into a matter of "how much stock may be secured at a given price?" rather than "how are we to know which way the market is going?" Paper buyers are reflecting the optimism and confidence of sellers that quotations can only be revised in an upward direction when any change comes.

News print failed to exhibit any decrease in sales volume in the course of the week, but, on the contrary, showed renewed signs of activity in its movement to consuming channels. Producers were gratified with the news of more abundant water in pulp grinding regions, and although most of the production centers of mechanical pulp in New England are still ice-bound, the fact that the thawing season is fast approaching gives the situation a brighter aspect.

Book paper held in good call throughout the week and consumers, rather than expressing buying reticence under the higher scale of prices recently adopted, are hastening to cover their needs before the anticipated advance in contract book of approximately $5 per ton. The latter is expected to take effect in several large houses on March 1 or shortly thereafter.

Fine papers continued to move in goodly volume and salesmen reported a much freer buying tendency in the consuming trade. Exports of fine paper have developed steadily since the middle of January and considerable impetus now attaches to the movement of these grades to Latin-American countries. Prices are firm to strong and mills are kept running actively.

In the New York tissue market a considerable volume of business was transacted at firm prices in the course of the week notwithstanding two important deterring factors. Approximately 15,000 textile workers are on strike, and the demand from this important consuming quarter fell off proportionately. Furthermore, ground wood eased off somewhat in price. Tissue quotations, however, are expected to maintain their present levels for some time to come as mills are not suffering for want of orders and high material costs still prove an important factor in the situation.

Wrapping paper showed healthy signs of improved demand coincident with the slight stiffening in imported kraft pulp quotations, and dealers in this market are inclined to be bullish in their attitude. Consumption of all grades of wrappings is being carried on at a rapid scale and the market is nothing if not firm.

A slight let-up in the stiff tension which has characterized the board market in recent weeks was made apparent when price drops approximating $5 per ton took effect in chip and straw grades. Chip is now quoted at $62.50 per ton, producing mill and demand is more irregular than it has been for some time.

Mechanical Pulp

Dethroned from the strong position it has held for the past month at prices in the neighborhood of $50 per ton, mechanical pulp last week occupied a lower berth, ranging quotationally from $45 to $48, the latter price being named only for freshly ground No. 1 spruce of prime quality and for immediate shipment. That the quoted prices of this commodity would ease off in the course of the month was the prediction in these columns on February 1, this conclusion being based on the approaching thaws in grinding regions, as well as the proportionally lower prices of chemical pulp and waste paper. Demand continued active throughout the week for ground wood and although mills have been reluctant to contract for future shipments of mechanical pulp at the high prices which have prevailed, they have been forced to meet their current needs at any price to maintain production.

Chemical Pulp

No alleviation is in sight in the Scandinavian pulp situation, according to several prominent importers in the New York trade, and Swedish mill owners are still holding the lockout which they instituted in late January. The volume of foreign pulp imports has not yet been seriously hampered, but already firmness has crept into the several markets whose chief source of supply is Sweden. Scandinavian kraft enhanced in value in the course of the week. The outstanding matter of importance to pulp men was, of course, the institution of exorbitant storage charges by Boston railroads. Eighty-two cents a hundred pounds is the amount ratified by the Interstate Commerce Commission to be charged for moving transit pulp stored in the port. The feeling amongst pulp importers against this heavy assessment is intense.

Old Rope and Bagging

Old rope has occupied a very strong position during the past week in consequence of the heavy mill demand combined with light collections and rising prices. No. 1 old domestic manila has been quoted to mills as high as 6.75 cents a pound.

Scrap bagging has been fairly steady in its movement to paper mills, but demand has been of a sporadic type and prices in this market have not exhibited the same firmness which is prevalent in that of old rope.

Waste Paper

Board-making and other low grades of waste paper remained fairly easy throughout the past week although medium grades and those more readily storable maintained their strong price tone. Better grades have been in excellent call of late, according to several prominent New York dealers, and the market tendency has been in an upward direction. Collectors of old waste papers were hindered by inclement weather conditions, but mills continued to absorb regular quantities, leading to the conclusion that the relaxation which prevails in a few grades of waste paper will probably be of a transitory character.

Rags

Fine paper manufacturers made frequent inquiries in the market for new cotton cuttings during the week past and quotations held quite firm. 12.00 cents a pound was freely paid for white shirt cuttings of No. 1 quality, while unbleached muslins ranged between 10 and 10.25 cents. Most grades of domestic cotton rags enjoyed a steady turnover at fairly strong prices.

Twine

Twine prices have undergone no change as a result of the last week's brisk trading, but dealers expect an increase to come in the near future.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations February 20, 1923:

	BID	ASKED
American Writing Paper Company pref.	28	29
International Paper Company, com.	53½	53¾
International Paper Company, pref., stamped	70	72
Union Bag & Paper Corporation	66	69⅝

Paper

F. o. b. Mill.

Ledgers	11.00	@	38.00
Bonds	9.00	@	55.00
Writings—			
Extra Superfine	16.00	@	35.00
Superfine	14.00	@	30.00
Tub Sized	10.00	@	15.00
Engine Sized	8.50	@	11.00
News—f. o. b. Mill—			
Rolls, contract	3.80	@	3.95
Rolls, transit	4.00	@	4.25
Sheets	4.25	@	4.50
Side Runs	3.50	@	4.15
Book, Cased—f. o. b. Mill			
S. & S. C.	7.50	@	14.00
M. F.	7.00	@	10.00
Coated and Enamel	9.00	@	14.00
Lithograph	9.00	@	14.00
Tissues—f. o. b. Mill			
White No. 1	1.00	@	1.15
Colored	1.25	@	2.50
Anti-Tarnish	1.90	@	2.40
Silver Tissue	—	@	—
Manila	.90	@	1.00
Kraft—f. o. b. Mill—			
No. 1 Domestic	7.00	@	7.50
No. 2 Domestic	6.75	@	7.00
Imported	6.50	@	7.00
Screenings	3.25	@	3.50
Manila—			
No. 1 Jute	8.50	@	9.00
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.50	@	5.50
No. 2 Wood	4.00	@	4.50
Butchers	4.25	@	4.75
Fiber Papers—			
No. 1 Fiber	6.00	@	6.25
No. 2 Fiber	5.25	@	5.50
Common Bogus	3.50	@	—
Card Middles	4.00	@	5.00
Boards—per ton—			
News	65.00	@	—
Straw	70.00	@	—
Chip	62.50	@	—
Binders' Board	80.00	@	—
Sgl. Mla. Ll.Chip	80.00	@	—
Wood Pulp	77.50	@	—
Container	82.50	@	—
Wax Paper—			
Self Sealing White 28 and 30 lb. basis	10.50	@	11.50
Waxed Tissue	1.50	@	1.60
Glassine—			
Bleached, basis 25 lbs.	15.00	@	16.00
Bleached, basis 20 lbs.	17.00	@	18.00
Papermakers' Felts, per ton—			
Dry	75.00	@	85.00
Saturated	65.00	@	75.00
Sheathing Paper, per ton—			
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00	@	65.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	43.00	@	46.00

(F. o. b. Mill)

No. 1 Domestic	45.00	@	47.00
For immediate shipment	47.00	@	—

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—			
Bleached	4.50	@	5.00
Easy Bleaching	3.25	@	3.50
No. 1 strong unbleached	3.00	@	3.25
No. 2 Strong unbleached	2.85	@	3.10
No. 1 Kraft	3.80	@	3.20
Sulphate—			
Bleached	4.00	@	4.25

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—			
Bleached	4.50	@	5.00
Strong unbl'chd.	3.00	@	3.25
Easy Bleaching Sulphite	3.00	@	3.50
News Sulphite	2.75	@	3.00
Mitscherlich	3.10	@	3.40
Kraft (Domestic)	3.00	@	3.25
Soda Bleached	4.25	@	4.50

Domestic Rags

New Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—			
New White, No. 1	11.75	@	12.25
New White, No. 2	6.50	@	7.00
Silesias, No. 1	7.50	@	8.00
New Unbleached	9.50	@	10.00
Washables	4.50	@	5.00
Fancy	6.25	@	6.75
Cotton—according to Grades—			
Blue Overall	6.75	@	7.25
New Blue	4.95	@	5.20
New Black Soft	5.00	@	5.50
New Light Seconds	2.90	@	3.15
O. D. Khaki Cuttings	4.25	@	4.75
Men's Corduroy	3.15	@	3.40
New Canvas	6.75	@	7.10
New Black Mixed Old	2.50	@	2.75
White, No. 1—			
Repacked	6.00	@	6.50
Miscellaneous	5.25	@	5.50
White, No. 2—			
Repacked	3.25	@	3.50
Miscellaneous	2.85	@	3.10
St. Soiled White	1.90	@	2.00
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.65	@	1.75
Black stockings	2.90	@	3.25
Roofing Rags—			
Cloth Strippings	1.35	@	1.45
No. 1	1.35	@	1.45
No. 2	1.25	@	1.35
No. 3	.85	@	.95
No. 4	.85	@	.95
No. 5A	1.05	@	1.15

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00 @	2.50
New Dark Cuttings	1.90 @	2.10
No. 1 White Linens	9.00 @	11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.60 @	1.70
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.30 @	1.35
Shoppery	1.00 @	1.05
French Blues	1.75 @	2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—			
Foreign	1.00	@	1.10
Domestic	1.00	@	1.10
Wool, Tares, light	1.45	@	1.55
Wool, Tares, heavy	1.40	@	1.50
Bright Bagging	1.05	@	1.20
No. 1 Scrap	1.05	@	1.20
Sound Bagging	.85	@	.95
Manila Rope—			
Foreign	5.95	@	6.25
Domestic	6.40	@	6.60
New Bu. Cut	2.15	@	2.25
Hessian Jute Threads—			
Foreign	5.95	@	6.25
Domestic	2.20	@	2.40
Mixed Strings	.90	@	1.00

Twines

Cotton—(F. o. b. Mill)			
No. 1	.35	@	.37
No. 2	.31	@	.33
No. 3	.37	@	.39
India, No. 6 basis—			
Light	.20	@	.21
Dark	.19	@	.20
B. C., 18 Basis	.41	@	.42
A. B. Italian, 18 Basis	.51	@	.61
Finished Jute—			
Dark, 18 basis	.29	@	.30
Light, 18 basis	.26	@	.27
Jute Wrapping, 3-6 Ply—			
No. 1	.23	@	.24
No. 2	.21	@	.22
Tube Rope—			
4-ply and larger	.15	@	.17
Fine Tube Yarn—			
5-ply and larger	.19	@	.21
4-ply	.20	@	.22
3-ply	.20	@	.22
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.18	@	.19
Jute Rope	.17	@	.20
Amer. Hemp, 6	.33	@	.35
Sisal Hay Rope—			
No. 1 Basis	.15	@	.17
No. 2 Basis	.13	@	.15
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, White, No. 1	4.25	@	4.50
Hard, White, No. 2	3.75	@	4.15
Soft, White, No. 1	3.65	@	3.85
Flat Stock—			
Stitchless	2.65	@	2.75
Over Issue Mag.	2.70	@	2.80
Solid Flat Book	2.50	@	2.60
Crumpled No. 1	2.20	@	2.35
Solid Book Ledger	3.00	@	3.25
Ledger Stock	2.70	@	2.80
New B. B. Chips	1.10	@	1.20
Manilas—			
New Env. Cut	2.75	@	3.00
New Cut No. 1	2.05	@	2.30
Extra No. 1 Old	1.80	@	1.90
Print	1.65	@	1.75
Container Board	1.50	@	1.65
Bogus Wrapper	1.25	@	1.40
Old Krafts, machine compressed Bales	2.15	@	2.30
News—			
No. 1 White News	1.25	@	1.35
Strictly Overissue	1.60	@	1.70
Strictly Folded	1.50	@	1.60
No. 1 Mixed Paper	1.35	@	1.50
Common paper	.90	@	1.00

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	30	@	35
No. 2 Rag Bond	18	@	25
Water Marked Sulphite	10	@	14
Sulphite Bond	9	@	12
Sulphite Ledger	11	@	14
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	22
No. 2 Fine Writing	12	@	20
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	6½	@	7
No. 1 S. & S. C. Book	7	@	7½
Coated Book	9	@	10¼
Coated Label	9	@	10
News—Rolls mill	4	@	4½
News—Sheets, mill	4½	@	4¾
No. 1 Manila	4¾	@	6
No. 1 Fiber	5¾	@	5¾
No. 2 Manila	4½	@	5
Butchers' Manila	4	@	4½
No. 1 Kraft	7	@	7½
No. 2 Kraft	6½	@	7
Wood Tag Boards	4½	@	5
Screenings	3	@	4
Boards, per ton—			
Plain Chip			
Solid News			
Manila Lined Chip			
Container Line—			
85 Test			
100 Test			

All quotations withdrawn

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	4.00	@	4.25
No. 1 Soft Shav	3.85	@	4.00
No. 1 Mixed	1.80	@	1.90
No. 2 Mixed	1.70	@	1.80
White Envel. Cuttings	4.00	@	4.25
Ledgers and writings	2.85	@	3.00
Solid Books	2.75	@	2.85
No. 1 Books, Light	2.20	@	2.25
Blanks	2.25	@	2.50
Ex. No. 1 Manila	2.40	@	2.50
Manila Envelope Cuttings	2.65	@	2.80
No. 1 Manilas	1.90	@	2.00
Folders News (over issue)	1.75	@	1.80
Old Newspaper	1.50	@	1.60
Mixed Papers	1.40	@	1.50
Straw Clippings	1.40	@	1.50
Binders Clippings	1.40	@	1.50
Kraft	2.40	@	2.50
New Kraft Cuts	2.70	@	2.85
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	32.00	@	—
No. 2	32.00	@	—
No. 3	30.00	@	—
No. 4	28.00	@	—

(These quotations have been in effect since Feb. 1, 1923.)

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.10	@	.60
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.20
Book, M. F.	.06	@	.11
Book, S. S. & C.	.08	@	.15
Book, Coated	.08	@	.15
Coated Lithograph	.10	@	.15
Label	.08	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.10
Manila No. 2	.07½	@	.08
No. 2 Kraft	—	@	.10
No. 1 Kraft	—	@	.11
Common Bogus	.02½	@	.03
Straw Board	75.00	@	85.00
News Board	65.00	@	70.00
Chip Board	62.50	@	67.00
Wood Pulp Board	1.25	@	1.50

(Carload Lots)

Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	75.00	@	80.00
Tarred Felts—			
Regular	48.00	@	50.00
Slaters	54.00	@	56.00
Best Tarred, 1-ply (per roll)	1.35	@	1.50
Best Tarred, 2-ply (per roll)	1.00	@	1.15
Best Tarred, 3-ply	1.50	@	1.65

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	1.25	@	
Domestic	1.20	@	1.25
Manila Rope	5.00	@	6.25
Sisal Rope	.75	@	.80
Mixed Rope	.75	@	.80
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	.75	@	.80
No. 1, New Lt. Burlap	1.75	@	2.00
New Burlap Cuttings	1.75	@	2.10

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	4.00	@	4.25
No. 2, Hard White	3.50	@	3.75
No. 1 Soft White	3.60	@	3.75
No. 2 Soft White	2.00	@	2.25
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50

(Continued on page 74)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 17, 1923

SUMMARY

News Print.....4,391 rolls, 308 bls.
Printing Paper .....123 bls., 327 rolls, 407 cs.
Wall Paper .....74 cs., 623 bls.
Filter Paper.....73 bls.
Cigarette Paper .....245 cs.
Wrapping Paper .....860 bls., 1,017 rolls
Colored Paper .....12 cs.
Photo Paper .....12 cs.
Coated Paper .....102 cs.
Tracing Paper .....22 cs.
Drawing Paper .....40 cs.
Tissue Paper .....25 cs.
Miscellaneous Paper..4,311 bls., 3,413 rolls 201 cs.

CIGARETTE PAPER

G. A. Henshaw & Sons, Baltic, Liverpool, 59 cs.
Hard & Ritter, Montserrat, Barcelona, 45 cs.
Harry H. Strauss, Roussillon, Havre, 2 cs.
De Manduit Paper Co., by same, 74 cs.
Liggett & Myers Tobacco Co. by same, 65 cs.

FILTER PAPER

J. Manheimer & Co., Roussillon, Havre, 73 bls.

WALL PAPER

A. C. Dodman, Jr., Inc., Lapland, Antwerp, 6 cs.
A. C. Dodman, Jr., Inc., by same, 7 bls.
A. Murphy & Co., Lapland, London, 11 bls.
A. Murphy & Co., by same, 1 cs.
Nat'l City Bank, Mongolia, Hamburg, 476 bls.
R. F. Downing & Co., Hamburg Maru, Yokohama, 49 cs.
A. Murphy & Co., Hansa, Hamburg, 8 bls.
A. Murphy & Co., Baltic, Liverpool, 21 bls.
A. Murphy & Co., by same, 11 cs.
W. H. S. Lloyd & Co., Vardulia, London, 53 bls.
R. F. Downing & Co., Barbadian, London, 47 bls.
R. F. Downing & Co., by same, 7 cs.

NEWS PRINT

D. C. Taggart, Topdalsfjord, Kristiansand, 314 rolls.
D. C. Taggart, Eksjo, Lundsvall, 2,143 rolls.
Parsons & Whittemore, Hannover, Bremen, 241 rolls.
H. B. Wadsworth, by same, 255 rolls.
C. H. Young, by same, 236 rolls.
New York "Tribune," by same, 242 rolls.
American Exchange Nat'l Bank, Stavangerfjord, Kristiania, 93 rolls.
Chemical Nat'l Bank, Elkton, Hamburg, 308 bls.
Parsons & Whittemore, by same, 887 rolls.

PRINTING PAPER

L. Schulman Co., Hannover, Bremen, 123 bls.
L. Schulman Co., by same, 327 rolls.
Perkins, Goodwin & Co., Stromboli, Genoa, 11 cs.
B. F. Drakenfeld & Co., Baltic, Liverpool, 18 cs.
M. O'Meara Co., Mt. Carroll, Hamburg, 171 cs.
M. O'Meara Co., Lapland, Antwerp, 101 cs.
Remington Typewriter Co., by same, 6 cs.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., Topdalsfjord, Bergen, 124 bls.
Wilkinson Bros. & Co., Inc., by same, 628 rolls.
Fernstrom Paper Co., Inc., by same, 120 rolls.
Fernstrom Paper Co., Inc., Mt. Carriell, Hamburg, 26 bls.
Chase Nat'l Bank, by same, 72 rolls.
A. E. MacAdam & Co., Elkton, Hamburg, 710 bls.
W. Schall & Co., Saxonia, Hamburg, 198 rolls.

COLORED PAPER

E. Daiber, Lapland, Antwerp, 8 cs.
C. W. Williams & Co., by same, 4 cs.

PHOTO PAPER

Gevaert Co. of America, Lapland, Antwerp, 12 cs.

COATED PAPER

Defender Photo-Supply Co., Hannover, Bremen, 102 cs.

TRACING PAPER

Keuffel & Esser, Hansa, Hamburg, 22 cs.

DRAWING PAPER

Keuffel & Esser, Hansa, Hamburg, 40 cs.

TISSUE PAPER

F. C. Strype, Baltic, Liverpool, 16 cs.
Meadoms Wye & Co., by same, 9 cs.

PAPER

Parsons & Whittemore, Hannover, Bremen, 866 bls.
Parsons & Whittemore, by same, 1,556 rolls.
Birn & Wachenheim, by same, 100 bls.
Birn & Wachenheim, Rousillon, Havre, 4 cs.
Coenca Morrison & Co., by same, 3 cs.
Whiting & Patterson, by same, 10 cs.
Japan Paper Co., Barbadian, London, 5 cs.
T. Nevin, by same, 5 cs.
Newsprint Paper Corp., Hannover, Bremen, 400 rolls.
H. Reeve Angel & Co., by same, 107 bls.
C. B. Hewitt, by same, 110 bls.
F. H. Leggett & Co., Stromboli, Genoa, 4 cs.
P. H. Petry & Co., Hansa, Hamburg, 11 cs.
Hensel Bruckman & Lorbacher, by same, 5 cs.
Fernstrom Paper Co., Inc., Stavangerfjord, Kristiania, 5 bls.
Fernstrom Paper Co., Inc., by same, 3 cs.
Int'l Acceptance Bank, by same, 390 rolls.
Int'l Acceptance Bank, by same, 306 bls.
Republic Bag & Paper Co., Orduna, Hamburg, 660 bls.
Ladenburg, Thalman & Co., by same, 1,762 bls.
C. G. Keferstein, by same, 70 rolls.
J. P. Hefferman Paper Co., by same, 169 bls.
Jenkins & Tuthill, Inc., by same, 12 bls.
Jenkins & Tuthill, Inc., by same, 345 rolls.
Crepe Kraft Co., Inc., Mongolia, Hamburg, 64 rolls.
Crepe Kraft Co., Inc., by same, 4 bls.
C. W. Rider & Co., by same, 48 rolls.
Irving Nat'l Bank, by same, 217 rolls.
Mugler & Umlauf, by same, 225 rolls.
Mugler & Umlauf, by same 66 bls.
M. M. Cohen, by same, 141 bls.
M. M. Cohen, by same, 98 rolls.
W. F. Etherington & Son, Saturnia, Glasgow, 101 cs.
Gardner, Moffat Co., Inc., by same, 3 bls.
F. L. Kraemar & Co., Pr. Monroe, London, 3 cs.
Whiting & Patterson, France, Havre, 10 cs.
Nat'l City Bank, Lapland, Antwerp, 19 cs.
Favor Ruhl & Co., Lapland, Havre, 8 cs.

RAGS, BAGGING, ETC.

Katzenstein & Keene, Inc., Breiz Izel, Havre, 133 bls. rags.
Katzenstein & Keene, Inc., Vardulia, London, 34 bls. new cuttings.
Equitable Trust Co., by same, 334 bls. waste paper.
Int'l Acceptance Bank, by same, 202 bls. paper stock.
Int'l Acceptance Bank, Hannover, Bremen, 722 bls. rags.
Royal Manufacturing Co., by same, 69 bls. cotton waste.
Atlas Waste Co., Totori Maru, Kobe, 30 bls. cotton waste.
Reiss & Co., Inc., Bradavon, Manchester, 23 bls. cotton waste.
Irving Nat'l Bank, by same, 88 bls. bagging.
Equitable Trust Co., by same, 190 bls. bagging.
I. Ahela & Co., Lucia, Trieste, 44 bls. rags.
Equitable Trust Co., Saturnia, Glasgow, 74 bls. waste paper.
Brown Bros. & Co., by same, 498 bls. waste paper.
Coal & Iron Nat'l Bank, by same, 86 bls. rags.
Mechanics & Metals Nat'l Bank, Roussillon, Havre, 106 bls. rags.
Columbia Bank, by same, 16 bls. rags.

OLD ROPE

Bemis Bros. Bag Co., Stavangerfjord, Kristiania, 80 coils.
New York Trust Co., Mongolia, Hamburg, 100 coils.
Equitable Trust Co., Saturnia, Glasgow, 96 coils.
H. Triest & Co., Sagoland, Progresso, 18 bls.
Int'l Acceptance Bank, Hannover, Bremen, 93 coils.
Brown Bros. & Co., by same 101 coils.
American Exchange Nat'l Bank, Saxonia, Hamburg, 87 coils.

WOODPULP

Nilsen Lyon & Co., Inc., Topdalsfjord, Kristiania, 300 bls., 50 tons.
J. Andersen & Co., by same, 1,560 bls., 263 tons.
E. M. Sergeant & Co., by same, 1,000 bls., 203 tons.
M. Gottesman & Co., Inc., Hannover, Bremen, 1,800 bls.
R. F. Hammond, Hannover, Hommelvik, 1,600 bls., 200 tons.
Nilsen Lyon & Co., Inc., Hannover, Bremen, 501 bls.
British Bk. of South America, by same, 250 bls.
Balkley, Dunton & Co., by same, 152 bls.
Pagel, Horton & Co., Inc., Eksjo, Hernosand, 4,350 bls., 725 tons.
M. Gottesman & Co., Inc., Stavangerfjord, Kristiania, 1,200 bls.
Nilsen Lyon & Co., Inc., by same, 300 bls.
H. Hollessen, Orduna, Hamburg, 563 bls.
Castle & Overton, by same, 440 bls.
C. B. Richard & Co., Mongolia, Hamburg, 74 bls.
H. Hollessen, Elkton, Hamburg, 2,335 bls., 467 tons.
Castle & Overton, by same, 805 bls., 161 tons.
Castle & Overton, Quebec City, Hamburg, 52 bls.
Brown Bros. & Co., Saxonia, Hamburg, 1,481 bls., 222 tons.

WOOD FLOUR

The Hansa Co., Elkton, Hamburg, 1,501 bags.
B. L. Soberski, Stavangerfjord, Kristiania, 1,050 bags.
B. L. Soberski, Topdalsfjord, Kristiania, 3,000 bags, 204,000 k's.

CASEIN

T. M. Duche & Sons, Rochambeau, Havre, 150 bags.
T. M. Duche & Sons, Ooma, Melbourne, 1,000 bags.
Atterbury Bros., Port Victor, Wellington, 700 bags.
Atterbury Bros., Can. Conqueror, Wellington, 700 bags.
Champion Coated Paper Co., Can. Conqueror, Auckland, 333 bags.
Nat'l City Bank, Vasari, Buenos Aires, 1,418 bags.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 17, 1923

J. A. & W. Bird & Co., Onia, Adelaide, 1,334 bags casein.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 17, 1923

American Woodpulp Corp., Eksjo, Sundsvall, 880 rolls news print.
Pagel Horton & Co., Inc., Eksjo, Hernosand, 5,460 bls. wood pulp, 910 tons.
M. Gottesman & Co., Inc., Brasilia, Hamburg, 2,667 bls. wood pulp, 533 tons.
Katzenstein & Keene, Inc., Vardulia, London, 432 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 17, 1923

M. Gottesman & Co., Inc., Virginia, Gothenburg, 1,250 bls. wood pulp.
Castle & Overton, Sverre, Norway, 3,500 bls. wood pulp.
Castle & Overton, Carenco, Antwerp, 303 bls. rags.
E. J. Keller & Co., Inc., Malgache, Marseilles, 50 bls. rags.
E. J. Keller Co., Inc., Ville d'Oran, Marseilles, 45 bls. rags.
E. J. Keller Co., Inc., Mackinaw, Bremen, 65 bls. rags.

CHARLESTON IMPORTS

WEEK ENDING FEBRUARY 17, 1923

E. J. Keller Co., Inc., Amista, Hamburg, 333 bls. bagging.

TAYLOR, BATES & CO.

Members New York Stock Exchange
Members New York Cotton Exchange

100 Broadway, New York
Tel. Rector 1140

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"Hafslund Bear" "Forshaga"
BLEACHED SULPHITE

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EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" "Bamble"
EXTRA STRONG KRAFT; BLEACHED AND BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST "Dejefors" DRY
WHITE SPRUCE—GROUND WOOD

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, FEBRUARY 20, 1923.

BLEACHING POWDER.—Bleach manufacturers and producers state that railroad embargoes are making shipments of the chemical more and more uncertain. The market is steadily firming and the majority of transactions are consummated within the range of 1.90 to 2.00 cents a pound, works.

BLANC FIXE.—Steady demand from the paper manufacturing trade has had the effect of maintaining a firm undertone in the blanc fixe market. Blanc fixe pulp is now quoted at $45 to $50 per ton and the dry is listed at $85 to $90.

CAUSTIC SODA.—Sixty per cent basis caustic soda has continued to hold very firm at the quoted price of 2.50 cents a pound and demand is reported to be quite active. The pronounced stimulus in those branches of the paper industry which consume caustic in large quantities has accounted for the heavy inroads on available stocks of this commodity.

CHINA CLAY.—Clay dealers state that business in both imported and domestic grades of coating and filling clays is progressing at a rapid clip and anticipate an advance in prices if any change from the present quotations is made. Filling clay of domestic origin has held at $9 to $12 per ton for the unwashed grades and $12 to $15 for the washed. Imported China clay has remained in very good call at $16 to $22, ex dock, New York.

CASEIN.—That no decided relief in the casein market is yet in sight was evidenced during the past week when one large consumer was reported to have paid 25 cents a pound for the commodity, duty for buyer's account. Dealers aver that small shipments for spot delivery bring as high as 27 to 30 cents a pound, though the nominal price is generally held in the neighborhood of 21 to 23 cents on contract.

LIQUID CHLORINE.—Strong demand from the paper manufacturing industry has strengthened the tone of the chlorine market, 6.00 to 6.20 cents a pound now being the average quotation.

PAPERMAKERS' GLUE.—Hide glue, used for tub-sizing has continued to hold in good call by the paper manufacturing trade, quotations to producers averaging 13 to 20 cents a pound.

ROSIN.—In the estimation of rosin producers this naval store has reached its low ebb in point of price at its present listing of 5.80 cents a pound, ex-dock, New York, for grades E, F and G in barrels of 280 pounds.

SALTCAKE.—Prices have been edging steadily in an upward direction in the saltcake market, one large New York dealer last week reporting his inability to secure a contract at $25 per ton. Chrome cake is listed at $25.50, producer's works and acid cake $27. Transportation tieups and embargoes are proving a serious deterring factor in this market.

SODA ASH.—Schedule prices on alkalis have been rigidly adhered to in recent transactions, forty-eight per cent basis soda ash being quoted to the paper making trade at the firm price of 1.20 cents a pound.

STARCH.—Papermakers' starch continues to be quoted at 2.82 cents a pound in bags and 3.10 cents in barrel quantities, while for these respective packings powdered starch is held at 2.72 and 3.00 cents.

SULPHATE OF ALUMINA.—Commercial grades of alum now list approximately 1.50 to 1.65 cents a pound in the East and 1.25 to 1.30 in the West. Freight congestion has tied up considerable quantities of this chemical and some producers have been apportioning their contract output on an allotment basis. Iron free sulphate is quoted at 2.55 to 2.75.

SULPHUR.—No changes have entered into the brimstone market of the past week and the quoted prices of $18 to $20 per ton are exceptionally firm.

Market Quotations

(*Continued from page 71*)

Solid Ledger Stock.	2.75	@	3.00
Writing Paper.....	2.50	@	2.75
No. 1 Books, heavy.	2.25	@	2.50
No. 2 Books, light.	1.40	@	1.50
No 1 New Manila.	2.75	@	3.00
No 1 Old Manila..	1.50	@	1.75
Container Manila...	1.35	@	1.50
Old Kraft.....	2.25	@	2.50
Overissue News....	150	@	1.60
Old Newspaper....	1.20	@	1.25
No. 1 Mixed Paper.	1.10	@	1.15
Common Paper.....	1.00	@	1.10
Straw Board, Chip.	1.00	@	1.10
Binders Bd., Chip..	1.00	@	1.10

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12	@	.12¼
New White, No. 2	.07	@	
Silicias, No. 1....	.07¼	@	.07½
New unbleached..	.10	@	.11
Washables	.04½	@	
Fancy	.05¼	@	.05½
Cottons—according to grades—			
Blue Overall....	.05½	@	.05¾
New Blue.....	.02¾	@	.02¾
New Black Soft	.06¼	@	.06¾
New Light Seconds	.02¾	@	.02¾
Khaki Cuttings..	.11	@	.04½
Corduroy	.03½	@	.04
New Canvass....	.08¼	@	.08¾
New Black Mixed	.04	@	
Old White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous ...	.03	@	.03¼
Thirds and Blues—			
Repackeed	200	@	2.25
Miscellaneous ...	1.85	@	1.90
Black Stockings....	2.75	@	3.00
Roofing Stock—			
No. 1.....	1.35	@	1.40
No. 2.....	1.25	@	1.30
No. 3.....	1.15	@	1.20
No. 4.....	1.15	@	1.20
No. 5A.....	1.10	@	
B.....			nominal
C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.08	@	.60
Ledgers	.08¼	@	.55
Writings	.08	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C..	.07¼	@	.12
Books, M. F.....	.06¾	@	.09½
Books, coated	.09	@	.15
Label	.08½	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila...$6.00		@	7.00
No. 1 Fiber ...	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping ..	.07	@	
Common Bogus ...	3.50	@	3.85

Boards

(Per Ton Destination)

Chip $70.00		@	—
News, Vat Lined..	72.50	@	—
Wood, Vat Lined.	$80.00	@	—
Filled News Board	75.00	@	—
Solid News Board.	80.00	@	—
S. Manila Chip...	75.00	@	80.00
Pat. Coated	90.00	@	95.00

Old Papers

Shavings—			
No. 1 Hard White	4.25	@	4.50
No. 1 Soft White	3.00	@	3.50
No. 1 Mixed....	$1.50	@	1.75
Ledgers & Writings	2.25	@	2.50
Solid Books.....	2.25	@	2.50
Blanks	1.70	@	1.80
No. 2 Light Books.	1.75	@	1.90
Folded News, overissues 26.00		@	28.00
Gunny Bagging ...	.85	@	.90
Manila Rope.....	5.75	@	6.00
Common Paper....	1.20	@	1.25
Old News.....	1.30	@	1.40
Old Kraft	2.00	@	2.10

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads).	3.75	@	—
Sheets (carloads)..	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho. 14.00		@	—
No. 2 Coated and litho. 13.00		@	—
No. 3 Coated and litho. 12.25		@	—
Coated and litho., colored 14.25		@	—
Wrapping—			
Grey	5.00	@	—
White Wrap.....	5.75	@	—
"B" Manila.....	6.00	@	—
No. 1 Manila.....	7.25	@	—
Fiber	7.25	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....$40.00		@	50.00
Sulphite easy bleaching 60.00		@	70.00
Sulphite news grade.	55.00	@	60.00
Sulphite, bleached.	100.00	@	105.00
Sulphate 70.00		@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.85	@	—
Soft White Book Shavings	3.50	@	
White Blk News.	2.15	@	—
Book and Ledger—			
Flat Magazine and Book Stock(old)	2.30	@	—
Light and Crumpled Book Stock	2.15	@	—
Ledgers and Writings	2.50	@	—
Solid Ledgers....	2.50	@	
Manilas—			
New Manila Cut.	2.15	@	—
Printed Manilas..	1.75	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	1.60	@	—
Folded News....	1.60	@	—
No. 1 Mixed Papers	1.35	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.			Per lb.
No. 1 White shirt cuttings	.11¼	@	.12
No. 2 White shirt cuttings	.06½	@	.07
Fancy shirt cuttings	.06¼	@	.06½
No. 1 Old whites	.04¼	@	—
Thirds and blues	2.50	@	2.65
			Per cwt.
Black stockings...	2.55	@	—
Roofing stock:			
No. 1.....	1.30	@	—
No. 2.....	1.05	@	—
Roofing stock:			
Manila rope.....	6.15	@	—
No. 2.....	1.55	@	—
Gunny bagging....	1.05	@	—